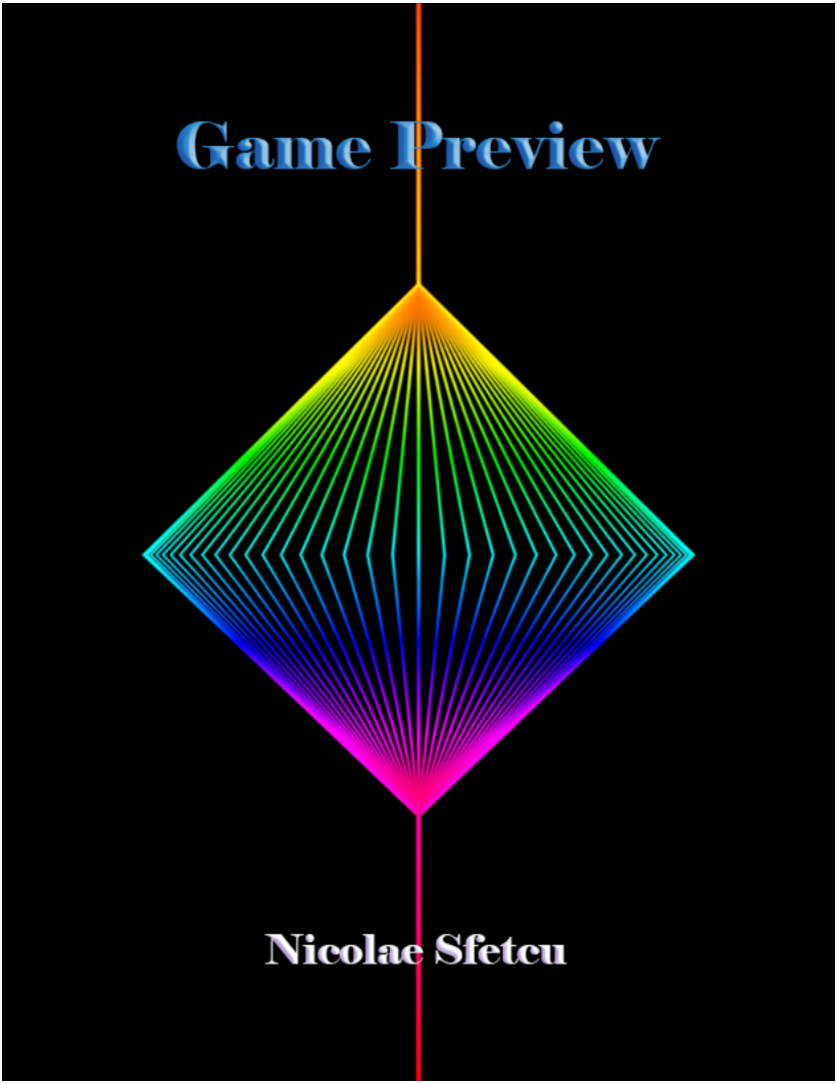

Game Preview

Nicolae Sfetcu

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Published by Nicolae Sfetcu

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online guide for game preview and rules: history, definitions, classification, theory, video game consoles, cheating, links, etc..

A **game** is an (often, but not always recreational) activity involving one or more players. This can be defined by either a goal that the players try to reach, or some set of rules that determines what the players can or can not do. Games are played primarily for entertainment or enjoyment, but may also serve as exercise or in an educational, simulational or psychological role.

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Games

Definition

Monopoly is the best selling board game in history. It is available in localized versions in many nations, such as this one in German.

Although many animals play, only humans confirmably have games. Whether some animals are intelligent enough to game is debatable, though a game has ritualistic elements (such as rules and procedures) that are voluntarily acted upon, rather than as a result of instinct. The existence of rules and criteria that decide the outcome of games imply that games require intelligence of a significant degree of sophistication.

Non-human animal species may, however, engage in games whose rules and sophistication may be of such a nature as to be incapable of detection by humans in their present state of knowledge. It would, for example, seem incongruous that large brained species such as many Cetaceans and the larger hominids did not play games. Our inability to observe and understand such games should not be taken as a confirmation that they do not exist. Some courtship displays by some species of bird, such as the Black Grouse, appear to have a component which, from an anthropolgical view, might appear to be a game in which there are clearly winners and losers.

Games can involve one player acting alone, or two or more players acting cooperatively. Most often involve competition among two or more players. Taking an action that falls outside the rules generally constitutes a foul or cheating.

All through human history, people have played games to entertain themselves and others. There are an enormous variety of games; for specific information about different types of games, see the links at the end of this article.

Although Games have been played for thousands of years, many people do not know as much as we believe about them. Things such as how they were invented and why are all matters of the human races of knowledge not yet understood today in the 21st century.

Games in philosophy

In Philosophical Investigations, philosopher Ludwig Wittgenstein argued that the concept "game" could not be contained by any single definition, but that games must be looked at as a series of definitions that share a "family resemblance" to one another. Games were important to Wittgenstein's later thought; he held that language was itself a game, consisting of tokens governed by rough-and-ready rules that arise by convention and are not strict.

Stanley Fish, looking for a clear example of the sorts of social constructions, cited the balls and strikes of baseball as example. While the strike zone target is governed by the rules of the game, it epitomizes the category of things that exist only because people have agreed to treat them as real. No pitch is a ball or a strike until it has been labelled as such by an appropriate authority, the plate umpire, whose judgment on this matter cannot be challenged within the current game.

Many technical fields are often applied to the study of games, including probability, statistics, economics, ethnomathematics, and game theory.

Anthropology of games

Games, being a characteristic human activity strongly determined by custom and the frequent subjects of folklore, have been the subject of anthropological investigations.

Classes of games

While many different subdivisions have been proposed, anthropologists classify games under three major headings, and have drawn some conclusions as to the social bases that each sort of game requires. They divide games broadly into:

- Games of pure skill, such as hopscotch and target shooting;
- Games of pure strategy, such as checkers, go, or tic-tac-toe;
- Games of chance, such as craps and snakes and ladders.

In addition to these basic classifications, there are mixed games; such as football, partly a game of skill and partly a game of strategy; poker, partly a game of strategy and partly a game of chance; and baseball, which combines elements of all three. Baseball Hall of Famer Casey Stengel underscored this point when he remarked, "I had many years when I was not so successful as a ballplayer, as it is a game of skill."

Games of pure skill are likely the oldest sort of game, and are found in all cultures, regardless of their level of material culture. They are associated with cultures that place a high value on individual performance and prowess.

Games of strategy require a higher material basis. They are associated with cultures that possess a written language: not surprising, since most strategy games are based on mathematics and feature the manipulation of symbols. They often require special equipment to be played. They are associated with hierarchical societies that place a high value on obedience.

Games of chance appear at a variety of levels of material culture; what they seem to share generally is a sense of economic insecurity. They are associated with cultures that place a high value on personal responsibility, keeping one's word, and maintaining personal standing in the face of misfortune; in other words, with "cultures of honor".

Games and sports

There is no clear line of demarcation between games and sports. Generally, sports are athletic in nature, and have an element of physical prowess, but then so do many games. For cultural anthropologists, the distinction between games and sports hinges on community involvement. Sports often require special equipment and playing fields or prepared grounds dedicated to their practice, a fact that often makes necessary the involvement of a community beyond the players themselves. Most sports can have spectators. Communities often align themselves with players of sports, who in a sense represent that community; they often align themselves against their opponents, or have traditional rivalries. The concept of fandom began with sports fans. Games amuse the players; sports amuse a broader public; in advanced material cultures, sports can be played by paid professionals. When games like chess and go are played professionally, they take on many of the characteritics of a sport.

One-person games

One-person games or one-player games are sometimes called solitaire games, but this term can be easily confused with the peg game and the card game of same name.

Types of one-player games include:

- many arcade games
- most computer and video games
- juggling
- most types of puzzles (logical, mechanical, mathematical, etc.)
- solitaire card games

Types of games

main article: Game classification

- Alternate reality game
- Ball games
- Board games
- Business games
- Car games
- Card games
    - Collectible card games
- Casino games
- Children's games
- Clapping games
- Computer and video games
    - Computer board games
    - Computer puzzle games
    - Internet games
        - Online skill-based games
        - MUDs
        - MMORPGs
- Conversation games
- Counting-out games
- Creative games

- Dice games
- Drinking games
- Educational games
- Economics games
- Game shows
- Games of chance
- Games of dare
- Games of logic
- Games of physical activity
- Games of physical skill
- Games of skill
- Games of strategy
- Games of status
- Global Positioning System-based games
- Group-dynamic games
- Guessing games
- Letter games
- Locative games
- The Losing Game
- Mathematical games
- New Games
- Open gaming
- Party games
- Parlour games
- Pencil and paper games
- Play-by-mail games
- Playground games
- Political games
- Pub games
- Puzzles
- Quizzes
- Role-playing games
- Singing games
- Spoken games
- String games
- Table-top games
- Tile-based games
- Theater games
- Traditional games
- Unclassified games
- Wargames
- Win-win games
- Word games

See also

- List of game manufacturers
- List of computer puzzle games
- Ludology
- Game semantics
- Game theory
- Play
- Puzzle
- Toy
- Artistic computer game modification
- Sports

References

- Avedon, Elliot; Sutton-Smith, Brian, *The study of games*. (Philadelphia: Wiley, 1971), reprinted Krieger, 1979. ISBN 0898740452

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Game Semantics

Game semantics (German: *dialogische Logik*) is an approach to the semantics of logic that grounds the concepts of truth or validity on game-theoretic concepts, such as the existence of a winning strategy for a player. Paul Lorenzen was the first to introduce a game semantics for logic, doing so in the late 1950s. Since then, a number of different game semantics have been studied in logic. Game semantics has also been applied to the formal semantics of programming languages.

Intuitionistic logic, denotational semantics, linear logic

The primary motivation for Lorenzen and Kuno Lorenz was to find a game-theoretic (their term was "dialogical" *Dialogische Logik*) semantics for intuitionistic logic. Blass was the first to point out connections between game semantics and linear logic. This line was further developed by Samson Abramsky, Radhakrishnan Jagadeesan, Pasquale Malacaria and independently Martin Hyland and Luke Ong, who placed special emphasis on compositionality, i.e. the definition of strategies inductively on the syntax. Using game semantics, the authors mentioned above have solved the long-standing problem of defining a fully abstract model for the programming languge PCF. Consequently, game semantics has led to fully abstract semantic models for a variety of programming languages and, to new semantic-directed methods of software verification by software model checking.

Quantifiers

Foundational considerations of game semantics have been more emphasised by Jaakko Hintikka and Gabriel Sandu, especially for Independence-friendly logic (IF logic, more recently Information-friendly logic), a logic with "branching" (or partially ordered) quantifiers. It was thought that the principle of compositionality fails for these logics, so that a Tarskian truth definition could not provide a suitable semantics. To get around this problem, the quantifiers were given a game-theoretic meaning. Specifically, a universal quantifier and existential quantifier represent a choice by a player from the domain. In the universal case, a natural name for the player is "Falsifier"; in the existential, "Verifier". Note that a single counterexample falsifies a universally quantified statement, and a single example suffices to verify an existentially quantified one. Wilfred Hodges has proposed a compositional semantics and proved it equivalent to game semantics for IF-logics. Foundational considerations have motivated the works of others, such as Japaridze's computability logic.

Articles

- Krabbe, E. C. W., 2001. "Dialogue Foundations: Dialogue Logic Revisited," *Supplement to the Proceedings of The Aristotelian Society 75*: 33-49.

Books

- K. Lorenz, P. Lorenzen: *Dialogische Logik*, Darmstadt 1978
- P. Lorenzen: *Lehrbuch der konstruktiven Wissenschaftstheorie*, Stuttgart 2000 ISBN 3-476-01784-2
- R. Inhetveen: *Logik. Eine dialog-orientierte Einführung.*, Leipzig 2003 ISBN 3-937219-02-1
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Game Mechanic

A **game mechanic** is a rule or set of rules intended to produce an enjoyable set of outcomes in a game. Complex games, such as role-playing games, are built using a large number of interlocking game mechanisms. The entirety of the game experience or set of game mechanics is called game play.

The interaction of the various Game_mechanic.html in a game determines the complexity and level of player interaction in the game. Designing a system of mechanics that interact well to produce a satisfying game is a challenging task, even for professional game designers. Some forms of game mechanic have been used in games for centuries, while others are relatively new, some having been invented within the past decade. The creation of new Game_mechanic.html, and ways in which existing ones can interact, is the ongoing goal of game designers.

Game_mechanic.html fall into several more or less well-defined categories.

Game play mechanics

These are mechanics that control how the players *play* the game.

Action points

These control what players may do on their turns in the game by allocating each player a budget of *action points* each turn. These points may be spent performing various actions according to the game rules, such as moving pieces, drawing cards, collecting money, etc. This type of mechanic is common in many German-style board games.

Auction or bidding

Some games use an auction or bidding system in which the players make competitive bids to determine which player gets the right to perform particular actions. Such an auction can be based on different forms of "payment":

- The winning bidder must pay for the won privilege with some form of game resource (game money, points, etc) (e.g.: RA).
- The winning bidder does not pay upon winning the auction, but the auction is a form of promise that the winner will achieve some outcome in the near future. If this outcome is not achieved, the bidder pays some form of penalty. Such a system is used in many trick-taking games, such as contract bridge.

In some games the auction determines a unique player who gains the privilege; in others the auction orders all players into a sequence, often the sequence in which they take turns during the current round of game play.

Cards

These involve the use of cards similar to playing cards to act as a randomiser and/or to act as tokens to keep track of states in the game.

A common use is for a deck of cards to be shuffled and placed face down on or near the game playing area. When a random result is called for, a player draws a card and what is printed on the card determines the outcome of the result.

Another use of cards occurs when players draw cards and retain them for later use in the game, without revealing them to other players. When used in this fashion, cards form a game resource.

Capture

In some games, the number of tokens a player has on the playing surface is related to his current strength in the game. In such games, it can be an important goal to *capture* opponent's tokens, meaning to remove them from the playing surface.

Captures can be achieved in a number of ways:

- Moving one of one's own tokens into a space occupied by an opposing token (e.g. chess).
- Jumping a token over the space occupied by an opposing token (e.g. draughts).
- Declaring an "attack" on an opposing token, and then determining the outcome of the attack, either in a deterministic

way by the game rules, or by using a randomising method.
- Surrounding a token with one's own tokens in some manner (e.g. go).
- Playing cards or other resources that the game allows to be used to capture tokens.

In some games, captured tokens are simply removed and play no further part in the game (e.g. chess). In others, captured tokens are removed but can return to play later in the game under various rules (e.g. backgammon). Less common is the case in which the capturing player takes possession of the captured tokens and can use them himself later in the game (e.g. shogi).

Dice

These involve the use of dice, usually as randomisers. Most dice used in games are the standard cubical dice numbered from 1 to 6, but increasing numbers of games make use of polyhedral dice or dice marked with symbols other than numbers.

The most common use of dice is to randomly determine the outcome of an interection in a game. An example is a player rolling dice to determine how many board spaces to move a game token.

Dice also often determine the outcomes of in-game conflict between players, with different outcomes of the dice roll of different benefit (or adverse effect) to each player involved. This is useful in games that simulate direct conflicts of interest.

Movement

Many board games involve the movement of playing tokens. How these tokens are allowed to move, and when, is governed by movement mechanics.

Some game boards are divided into more or less equally-sized areas, each of which can be occupied by one or more game tokens. (Often such areas are called squares, even if not strictly square in shape.) Movement rules will specify how and when a token can be moved to another area. For example, a player may be allowed to move a token to an adjacent area, but not one further away. Dice are sometimes used to randomise the allowable movements.

Other games, particularly miniatures games are played on surfaces with no marked areas. A common movement mechanic in this case is to measure the distance which the miniatures are allowed to move with a ruler.

Resource management

Many games involve the management of *resources*. Examples of game resources include game tokens, game money, and game points. Resource management involves the players establishing relative values for various types of available resources, in the context of the current state of the game and the desired outcome (i.e. winning the game). The game will have rules that determine how players can increase, spend, or exchange their various resources. The skilful management of resources under such rules allows players to influence the outcome of the game.

Role-playing

Role-playing games often rely on mechanics that determine the effectiveness of in-game actions by how well the player acts out the role of a fictional character. While early role-playing games such as the first edition of Dungeons & Dragons relied heavily on randomisers such as dice to determine the outcomes of role-playing actions such as diplomatic negotiations, later generations of games often use the standard of "good role-playing" as a modifier or even the sole determinant of whether such an action is successful.

Tile-laying

Many games use tiles - flat, rigid pieces of a regular shape - that can be laid down on a flat surface to form a tessellation. Usually such tiles have patterns or symbols on their surfaces, that combine when tessellated to form game-mechanically significant combinations.

The tiles themselves are often drawn at random by the players, either immediately before placing them on the playing surface, or in groups to form a pool or hand of tiles from which the player may select one to play.

Tiles can be used in two distinct ways:

- The playing of a tile itself is directly significant to the outcome of the game, in that where and when it is played contributes points or resources to the player.
- Tiles are used to build a board upon which other game tokens are placed, and the interaction of those tokens with the tiles provides game points or resources.

Examples of tile mechanics include: Scrabble, in which tiles are letters and players lay them down to form words and score points; and Tikal, in which players lay tiles representing newly explored areas of jungle, through which archaeologists (represented by tokens) must move to score game points.

Victory condition mechanics

These mechanics control how a player *wins* the game.

Goals

This is the most general sort of victory condition, which can be broad enough to encompass any method of winning, but here refers to game-specific goals that are usually not duplicated in other games. An example is the checkmate of a king in chess.

Piece elimination

Some games with capture mechanics are won by the player who removes all, or a given number of, the opponents' playing pieces.

Puzzle guessing

Some games end when a player guesses (or solves by logic) the answer to a puzzle or riddle posed by the game. The player who guesses successfully wins. Examples include hangman and zendo.

Races

Many simple games (and some complex ones) are effectively races. The first player to advance one or more tokens to or beyond a certain point on the board wins. Examples: backgammon, ludo.

Structure building

The goal of a structure building game is to acquire and assemble a set of game resources into either a defined winning structure, or into a structure that is somehow better than those of other players. In some games, the acquisition is of primary importance (e.g. concentration), while in others the resources are readily available and the interactions between them form more or less useful structures (e.g. poker).

Territory control

A winner may be decided by which player controls the most "territory" on the playing surface, or a specific piece of territory. This is common in wargames, but is also used in more abstract games such as go.

Victory points

These are points that a player accumulates over the course of a game. The winner can be decided either by:

- The first player to reach a set number of points.
- The player with the most points at a predetermined finishing time or state of the game.

This mechanic is often used explicitly in German-style board games, but many other games are played for points that form a winning condition. Victory points may be partially disguised in the role of game resources, with play money being a common example.

Gameplay vs. Game_mechanic.html in video games

Generally, the term "gameplay" in video game terminology is used to describe the overall experience of playing the game excluding the factors of graphics, sound, and the storyline. This is the very essence of a game. The term "Game mechanics" refers to sub elements of the gameplay, but particularly the primary control and movement features of the game (thus excluding things like level design or AI). See gameplay.

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Artistic Computer Game Modification

Artistic computer game modification involves the use of a computer game for the creation of a digital artwork. Also referred to as art modding, and game modding. Art mods are not quite the same as art games, although they do share some similarities.

Various genres and styles of art modding exist. Genres or categories are rarely clear cut in this multi-media format, however than can be roughly described based on:

1. Techniques
2. Outcomes

Techniques

Narrative Machinima

Screen-based narratives made using pre-existing, often modded, computer games. Many of these explore innovative conceptual territory.

Examples:

- Red vs Blue

Sequential Machinima

With the use of certain Photoshop filters, comics fonts, and fonts for speech bubbles, in-game screenshots can also be used to quickly create graphic novels.

Abstract Machinima

Screen-based visual abstractions made using pre-existing, often modded, computer games.

Sonichima

Sound works produced within a game-based production environment.

Examples:

- Tree Wave

Generative Art Mods

Exploit the real time capabilities of game technologies to produce ever-renewing art works.

Performative Interventions

Disrupt in-game norms to expose underlying functions of game play.

Site-specific Installations and site-relative mods

Compare similarities and differences between real and virtual worlds, drawing us further into a realit of fantasy.

Real time performance instruments

Allow audio and visual artists to create stunning, live performances in a range of virtual entertainment environments.

Like games, artistic game mods may be single player or multiplayer. Multiplayer works make use of networked environments to develop new models of interactivity and collaborative production.

Artists

- Brody Condon
- Eddo Stern
- Critical Art Ensemble
- Cory Arcangel
- Paul Slocum
- Jean Paul Birchard
- Jeffrey F. Donaldson
- Fuchs-Eckerman
- Glaznost
- Jodi
- Julian Oliver
- Linda Erceg
- Nybble-Engine
- Palle Torsson
- Rebecca Cannon
- Retroyou
- Stephen Honegger
- Tobias Bernstrup

Timeline

- 'Mimesia' by Richard Brown.

2004

- Prepared Playstation by RSG.
- Voldo Dance by Chris Brandt.

Theorists

- Rebecca Cannon
- Anne-Marie Schleiner
- Mary Flanagan
- Celia Pearce
- Julian Oliver
- Pippa Stalker
- Christopher Dodds

See also

- computer and video games
- computer and video game genres
- gameplay

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Game Artists

A **game artist** is responsible for all of the aspects of game development that calls for visual art. Game artists are often noted in role-playing games, collectible card games, and computer and video games.

Computer and video games

In modern computer and video games, game artists create 2D art used as textures or 3D models and animations.

They often design the look of the character through concept art and render them to be integrated into the game. They are also responsible for designing scenery, props, and any other visual effects in the game, like FMVs.

The abilities of early computers were so limited that having specialized personnel for art was unnecessary. Up until about the early 1990s, almost all art for video games were created by the game programmers. Most early video game art was simply created in code by specifying pixel colors and coordinates.

In recent times, dedicated video game artists make up a large part of many game development teams.

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Toys

A **toy** is something to play with, for children, adults or both. They may either be the sole device used in an enjoyable activity or one of many. Toys have existed for thousands of years; dolls either of infants, animals, or soldiers, and miniature representations of the tools of adults are readily found at archaeological sites. The Inca, for example, had a rolling toy even though their adult culture did not employ the wheel. Two comparatively recent developments of toys have been their mass production and copyrighting. A number of these copyrighted, mass-produced toys are associated with particular decades in the twentieth century.

Many successful films, television programs, books and sport teams have official merchandise, quite often toys will be made and sold. Some notable examples are Star Wars and Manchester United. The haulage company owned by Eddie Stobart produced model lorries, which now subsidise the business.

Toys sold primarily as entertainment for adults are termed executive toys as some were originally marketed as a way to reduce executive stress. The term also avoids 'adult toy' which has connotations of sex toys used to enhance sexual excitement.

Some things usually thought to be games are actually toys, such as the computer game SimCity and its spinoffs, which are called software toys. As a rule, if something game-like lacks an explicit end state, it is a toy, not a game.

Toys by culture

This is not a complete list.

US pioneers: In the 1800's many families crossing the great plains were known as pioneers. The pioneer children often had such toys as tops and dolls. They also played simple games like 'hide and seek'.

America: Today Americans have all sorts of toys, the main ones being listed below. But this is and era of computers and video games, and many children (and even adults) have toys such as the Xbox, Gamecube, etc. and computer games such as Half-life.

Examples

- Construction toys

Erector Set
Gami, Plastic Origami
Jovo
K'NEX
LEGO
Lincoln Logs
Märklin
Meccano
Mega Bloks
Stickle bricks
Tinkertoy
Zome

- Figures

Dolls
Raggedy Ann
Action figures
Playmobil
Digital pet
Jumping Jack
Toy soldier
Stuffed animals
Pound Puppies
Teddy bear
Sock monkey

- Drawing toys

Decoder pen
Spirograph
Stencil

- Educational toy

Ant Farm

- Mechanical toys

Jack-in-the-Box
Magic trick
Newton's cradle
Easy Bake Oven

- Mechanical puzzle

Rubik's Cube

- Miniaturized items

Toy piano
Toy weapon

- Model building

Model car
Model railway
Carpet railway

- Model collecting

Matchbox cars

- Science and optical

Kaleidoscope
View-master
Spinning top
Zoetrope

- physical activity and dexterity toys

Bungee Balls
Frisbee (1950s)
Hula Hoop (1950s)
Marbles
Pogo stick
Soap-box cart
Footbag
Chinese yo-yo (diabolo)
Yo-Yo (1930s onwards)

Materials

- Nerf

See also

- Game

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Gameplay

Gameplay includes all player experiences during the interaction with game systems, especially formal games. Proper use is coupled with reference to "*what the player does*".

Arising alongside the development of game designers in the 1980s, *gameplay* was used solely within the context of video or computer games, though now its popularity has begun to see use in the description of other, more traditional, game forms.

Many current game design practitioners and theorists will argue that *gameplay* is a largely meaningless or empty term, superseded by other concepts established in the repertoire of perception, anthropology, and general diversified psychology. Others see the very term as an indication current game design (art) theories remain primitive and underdeveloped noting that, for example, cinema does not require "movie-watch" nor novels "book-read" in order that these (non-interactive) media be described formally. On the other hand, some game critics feel that gameplay is in fact to games as story is to book, the very essence of the game to which elements such as story are added to. Current academic discussions tend to favor more practical terms such as "game mechanics".

Despite these arguments, the use of *gameplay* has become a core member of popular computer gaming culture nomenclature as it succinctly indicates a domain of perceptual concepts not readily accessible by other phrases.

Gameplay vs. Game_mechanic.html in video games

Generally, the term "gameplay" in video game terminology is used to describe the overall experience of playing the game excluding the factors of graphics, sound, and the storyline. The term "Game_mechanic.html" refers to sub-elements of the gameplay, but particularly the primary control and movement features of the game (thus excluding things like level design or AI).

Score

In a game the **score** refers to the amount of points achieved by a player or team.

In almost all games a high score of many points is what is needed to win the game. However, there are a few notable exceptions.

Sport

In many popular sports points are most commonly achieved through obtaining "goals" or "scores." For example, in soccer, hockey, and basketball goals are achieved by putting the ball in the opposing team's net. Other team sports like baseball and cricket have more compliated scoring procedures.

Individual-based sports like golf and tennis have points-based scoring as well.

Most sports have time limits, which means point-based victories are usually the result of obtaining more points than one's opponent, and not simply achieving a set "magic number" of points.

Video Games

In video games points are usually an optional, side component of gaming. Players may achieve points through normal gameplay, but their score will often not have an immediate relevance to the game itself. Instead, getting a "high score" and then trying to beat that score in subsequent play becomes a side-challenge to offer replay value.

Some have argued that points in video games are somewhat of an anachronism in modern gaming. During the era of arcade games, when games could not be "won" or "completed," but were instead endless cycles of continious gameplay, points had a much greater relevance. Today, however, many gamers no longer care about beating high scores since such victories offer little reward other than self-satisfaction. Many modern games no longer even keep track of score, and many that do no longer feature an option to save record high scores.

Sometimes the score of a game can have relevance to gameplay. In fighting games, for example, scoring a very high number of points could result in unlockable players or modes. In arcade games or certain platformers, high scores could result in an extra life.

Home | Up | High Score

High Score

The **high score** of a video game, arcade game, or computer game is usually the highest logged point value. Many times a game will have a list of several high scores, called the **high score list.**

History

The high score first achieved cultural significance with the rise in popularity of pinball machines. Players who achieve a high score are often greeted with a congratulatory message and are able to enter their initials or name into the machine. Their score and name will remain there until someone "knocks" them off the high score list by achieving a higher score. This functioning has caused high scores of popular games to carry a certain amount of "bragging rights" as it is proof of excellence in a game.

The high score has a close association to the "free game." When in an arcade, many games will offer a player a free chance at another game if they achieve a high score. This has declined in popularity in recent years, as players are often allowed to play for as long as they can without losing, but not given free games even if they achieve a high score.

The first video game to have a high score was Space Invaders (1978), but what made it take off was the personalized highscores introduced in Asteroids (1979). This meant that players now could compete with each other over who had the highest score.

The popularity of the high score has made it nearly ubiquitous among modern video games. In fact, the high score has become a defining feature of many games. Magazines such as Nintendo Power and Sega Visions would often publish high scores submitted by their readers. Often the performance would have to be videotaped to verify the achievement. The high score also exists in online games in various forms.

Many games include default "high scores" that do not actually represent real players, but are displayed whenever the machine's memory is reset, often with generic initials such as "AAA." These scores often represent certain levels of achievement for a player to aspire to. As a player still needs to knock these off in order to get his own score and initials listed, the default high scores ensure that there is always something for players to compete with (and keep them putting in quarters). Many computer games also have default high scores built in, sometimes attributed to fictitious entities (e.g. *Commander Keen*) or to members of the game's development team.

Some players as a joke will relinquish their bragging rights to enter a fake name or initials with their high score, particularly on arcade games in public places. This can be seen as juvenile humor; even on games that only allow initials, it is not uncommon to see "ASS", "SEX", or other profane or provocative three letter combinations.

Internet influence

While on old games the high score would only be visible on one particular machine, the spread of the Internet has made it possible to compete with the rest of the world. A lot of modern games have the ability to post your high score to a central webpage. Online multiplayer games, especially first person shooters, real time strategies, and RPGs often have ranking systems. These new high score lists and ranking systems often are more complex than conventional high score lists. Some are based on tournaments, while others track game servers continuously, keeping statistics for all players.

High score in culture

The high score's prominence in video game culture, and even mainstream society has led to various pieces of art and entertainment. There is a cartoon titled High Score. There is also a book entitled High Score!: The Illustrated History of Electronic Games.

In an episode of the TV series Seinfeld, George is astonished to find that the Frogger machine he played as a teen still retains his high score. With the owners wanting to get rid of it, George decides to keep the machine for posterity, the catch being that he has to move the game without unplugging it, because if he unplugs the game the high score will be erased. Unfortunately the machine is destroyed when George unsuccessfully tries to move it across the street in a spoof of the gameplay.

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Game Players

A **player** of a game is a participant therein. Normally, there are at least two players in a game, but one-player games exist and are collectively known as solitaire games.

Players in competition

In most games, one player (or team) is declared the winner, the player who performed the best. Some multi-player games can have multiple winners, but in Western societies, one player (or team) is normally considered to be the "1st place", or best, among them, and ensure the existence of tie-breaking structures to ensure a singular "1st place". This is not true universally; for example, in Japan ties are considered to be wins for both sides. Some games use multiple means of scoring or determining the conditions of victory; in these games, it may be possible for two or more players or teams to simultaneously win, which, depending on the game, may be counted as wins for both or simply a tie.

Number of players

There is a wide range to the number of players who may take part in a game. While most board games and card games have fewer than 10 players, for logistical reasons, tournaments, or meta-games consisting of many games, can have over 1000. Internet games may have thousands of players participating in a massive game simultaneously. Alternatively, John Horton Conway's game of Life is considered to be a zero-player game.

The number of players that a game allows is an important factor in game design. Game designers aim to accommodate as wide a range of player numbers as possible, since, for example, a strictly four-player game will not happily accommodate three or five players who want to play. Some have argued that much of Poker's popularity derives from how readily the game adapts to as few as 2 or as many as 10 players.

Games adapt themselves to varying numbers of players in a number of different ways:

- Gin rummy, which cannot easily be adapted for two players, uses a structure for three whereby two participate in a round, one sitting out. Specifically, the winner of the previous round remains in the next, while the loser sits out. (Four players would split into two games.)
- Hearts, for six or more players, is traditionally played double-deck, with a cancellation mechanism.

- Poker and other vying games easily adapt themselves to varying play number, as soon as there are enough cards. For example, seven-card stud poker clearly cannot accommodate eight or more players with one deck.
- Puerto Rico varies the number of game tokens and round structure to accommodate variations in player number.
- Role-playing games can be adapted easily according to player number, limited only by the willingness of the gamemaster. Four to six players is often claimed to be the "best" number of players, although this is quite contested.

Home | Up | Virtual Communities

Virtual Communities

A **virtual community** is a group of people communicating or interacting with each other by means of information technologies, typically the Internet, rather than face to face. Virtual communities are also known as **online communities** or **mediated communities**.

The term *virtual community* is attributed to the book of the same title by Howard Rheingold in 1993. The book discussed a range of computer-mediated communication and social groups. The technologies included Usenet, MUDs (Multi-User Dungeon) and their derivatives MUSHes and MOOs, IRC (Internet Relay Chat), chat rooms and electronic mailing lists; the World Wide Web was not yet used by many people. He pointed out the potential benefits for personal psychological well-being, as well as for society at large, of belonging to such a group.

Today, *virtual community* can be used loosely for a variety of social groups interacting via the Internet. It does not necessarily mean that there is a strong bond among the members. An email distribution list may have hundreds of members and the communication which takes place may be merely informational (questions and answers are posted), but members may remain relative strangers and uninterested in each other and the membership turnover rate could be high. This is in line with the liberal use of the term *community*.

The idea that media could generate a community is quite old. Progressive thinkers such as Charles Cooley, early in the 20th century in the United States, envisioned a nation whose members are united strongly because of the increased use of mass media. Also well-known is the term community without propinquity, coined by sociologist Melvin Webber in 1963.

The explosive diffusion of the Internet into some countries such as the United States was also accompanied by the proliferation of virtual communities. The nature of those communities and communications is rather diverse, and the benefits that Rheingold envisioned are not necessarily realized, or pursued, by many. At the same time, it is rather commonplace to see anecdotes of someone in need of special help or in search of a community benefitting from the use of the Internet.

Benchmark Virtual Communities

BBS: The WELL, GEnie
Blog: LiveJournal, Xanga
Habitat: LucasFilm's Habitat, VZones
IM: ICQ
IRC/EFNet
MMORPG: Everquest, Ultima Online
MOO: LambdaMOO
MUD/MUSH: Colossal Cave Adventure, TinyMUD
P2P: Kazaa, Morpheus, Napster
USENET
Wiki: Wikipedia, WikiWikiWeb
WWW: eBay, GeoCities, Slashdot

Additional Virtual Community Listings

Discussion boards

Electric Minds
GameFAQs
Something Awful
2channel

Art communities

DeviantART
Sheezyart
Elfwood

MUD, MUSH, MOO

GemStone][and GemStone III

Category:MU* servers
Category:MU* games

Other types

GameTZ.com (an online game, music, movie, and book trading community)
Meetup (an online service designed to facilitate real-world meetings of people involved in various virtual communities)
Hospitality Club (free accommodation world wide through hospitality exchange)
bianca

Virtual Community Pioneers and Experts

Jonathan Bishop
Howard Rheingold
Sherry Turkle

See Also

- Massively Multiplayer Online Role-playing Games
- The Virtual Community
- Virtual Community of Practice

Home | Up | Clan

Clan

In computer and video gaming, a **clan** or **guild** is a group of players who regularly play together in a particular multiplayer game. These range from groups of a few friends to 1000-person organizations, with a broad range of structures, goals and members. Numerous clans exist for nearly every online game available today, notably in first-person shooters, massively multiplayer games, role-playing games, and strategy games.

Player organizations probably emerged in the earliest networked multiplayer computer games that brought together disparate groups of players, such as players in a MUD from two rival universities. The first turn-based or RPG clans were the player guilds in the first graphical MMORPG, Neverwinter Nights, which ran on AOL from 1991 through 1997. The first real-time game clans as we recognize them today were formed in 1996, around games such as Quake, Descent, and the Netmech multiplayer expansion pack for the PC game Mechwarrior 2.

Starting with small groups, referring to themselves as guilds or clans, these organizations typically involved gamers playing one particular game. Around 2000, it seems that several of the larger groups formed themselves into multi-game organizations, allowing gamers to play with the same people in many different games.

Clans by Structure

Small social groups

Most gamers organize themselves into small groups of like-minded players in order to play together and socialize. Typically, these groups start suddenly, contain a handful of members, focus on a single game and have a short life span. There are literally hundreds of these clans or guilds in each online game.

Single-game groups

There are also many larger, longer-lasting groups devoted to a single game. Examples can be found in every long-lasting online game, in particular, role-playing games, which have a strong social element..

Communities

Some gamers are organized less formally in communities, which may also contain clans or guilds. Often these communities include websites generating a fair amount of news and active forums to give the members their sense of community.

Syndicates

Finally, there are a numbers of more persistent and more organized groups that field players in a variety of games. These groups share some of the characteristics of the single-game groups and communities.

E-Sports Teams

E-Sports clans are organizations created solely for competition. They are often small in size but their size is also usually determined by how many players they need to meet numbers for competing regularly. Social interaction and friendship is often a requirement for the stability of these teams but it is not the main purpose for the organization, this means that many of these teams are short lived but those who do not fall apart due to social conflicts tend to last for a long time and stay together should they change to a newer game. E-Sports teams also often have a tendency to form larger multi-game syndicates.

Clans by game genre

Clans in first-person shooters

These games initially only offered "deathmatch" play, where gameplay is focused solely on killing the characters of the other players. The popularity of clans and team-based versions of deathmatch led to the design of objective-based team games such as capture the flag.

Due to the relatively unorganised structure of first-person shooter games the players tend to take on the organisation themselves. This has led to the genre generating a large number of websites to help organise these gaming communities as well as the vast number of different styles of clans in these games. Some clans are large and have loose associations with each other and may only play on public servers with each other for social reasons. At the other end of the spectrum other clans may prefer to keep a small, tight team of players and concentrate on playing competitively against other clans in arranged matches and possibly in leagues. While the clan itself provides the social element in larger clans, the social aspect for the smaller, more competitive clans comes more from interaction with other clans.

Competition between clans is common but also takes many forms. Some clans have been known to be content with playing against each other on public servers, while others organise matches with other clans. Notably, some take this further and take part in leagues and tournaments. A lot of the time this is purely for fun but some of these leagues and tournaments have become fiercely competitive to the extent that practice and planning will becomes highly organised. This kind of the competition is starting to be referred to as electronic sports (e-sports), though there are many other similar terms for this. E-sports can be purely amateur over the Internet or for large cash prizes on local area networks. This kind of competition also applies to other genres, particularly strategy games.

Many clans have their own private servers to play their game of choice on. These are most handy for holding practice matches against other clans and other forms of practice. Private servers are also convenient since they do not have problems that plague public servers, such as team killers and other behaviour that is the gaming equivalent of the anti-social behaviour when people have anonymity over the Internet such as spamming and trolling on message boards and chat rooms. As a side note there are even clans who set up just to perpetuate this kind of abuse.

Clans in strategy games

Most popular multiplayer strategy games such as Warcraft and Command and Conquer offer a matchmaking service to find matches provided by the publisher or developer of the game. Often these services have their own structures for organising clans. Some of these services offer tournaments and ladders for clans to compete on either directly clan versus clan or indirectly by giving clan members points for winning 1v1 or 2v2 games and adding that to clan totals.

Clans in RPGs

Clans also exist in other genres, where they often go by a different name and serve a purpose more suited to the game. Many online massively multiplayer and computer role-playing games tend to call them 'guilds' or invent their own term (for example Star Wars Galaxies calls them 'player associations'). Earth: 2025, a web browser-based game, formerly called them 'alliances', but switched to 'clans' as the word increased in popularity.

There are few guild versus guild tournaments in online RPGs, although the number of games with guild versus guild combat is increasing. Guilds usually are a cooperative planning and play group in these games, sometimes paralleling the functions of medieval guilds. In Neverwinter Nights, where the first such guilds appeared, they declared their own quests and scheduled cooperative play. Sometimes in MMORPGs, guilds take on the role of vigilante groups or the mafia, protecting its members from other players and guilds. These guilds form in the most literal sense in games that feature player versus player combat. EverQuest infamously spawned uberguilds: Extremely influential guilds formed by the best players on the server for the purpose of securing for its members all the newest and most powerful abilities and loot.

Many clans or guilds use a point system called DKP for determining loot distribution.

Organization

The larger a clan gets the more hierarchical the organizational structure tends to become. Usually there is at least a clan leader, in small teams a clan leader may only be a team captain heading the team in game and initiating discussions to solve problems. In larger clans the leader is often responsible for the entirety of organizing the clan, with a number of basic members. If the clan expands, experienced members are usually promoted and are delegated various tasks such as recruiting, disciplining rule-breakers, member training, webpage maintenance, and others.

In most games, players show the clan they belong to by using a unique tag which takes the form of a prefix or suffix tag. clan tag Tags are often enclosed in brackets or symbols and coloured differently if the game allows it. For example, in a name like "[EW]Bob", "[EW]" is the clan tag and "Bob" is the player's name.

In MMORPGs and strategy games the game often features a separate mechanism used to identify the clan a player belongs to. For example in Dark Age of Camelot, the player's guild appears in full below the player's name. In games that allow players to customize their appearance (usually by picking the color of their attire), clan members might all share a similar look, or bear their clan's logo on their character's outfit. The MMORPG World of Warcraft introduced tabards, in which a guild master could customize a tabard to any look he wanted, and then guild members could buy one so they'd all be wearing guild colors.

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Game Manufacturers

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Freeware Games

Freeware refers to software that can be used, downloaded, or distributed free of charge.

It does not refer to games under a Free Software license that allow modifying or redistribution of source code. See List of free game software for such games.

Games that are free but suggest a donation or fee, or require purchase for extended play time, new content and other features, are Shareware.

Games

- *123 Free Solitaire*, one of the top stand-alone solitaire downloads on the internet. Yearly editions swap out 4 of the 12 games included. A game option includes being able to change the card-back designs.
- *Abashera* is a first person, 3D maze IQ game.
- *America's Army*, first-person shooter developed and distributed by US Army
- *Angband* (another popular RPG in the roguelike family), and its many variants. Source code of Angband is also available, but it is not Free software. However, there is an effort ongoing to re-license Angband under the GNU GPL.
- *BVE*, free Railroad Simulator created by Mackoy of Japan.
- *Chromatron* is a free laser & mirrors puzzle game
- *CodeRED: Alien Arena*, fully functioned free deathmatch shooter that runs on Windows and Linux, and features standard deathmatch, team deathmatch, capture the flag, and all out assault, in a funky 50's era sci-fi atmosphere.
- *Control Monger* is a free online first person shooter
- *CrateMaster* is a free Tetris clone/parody by Longbow Digital Arts. It was used to promote the game Tread Marks in a high score contest on the Old Man Murray website. Gameplay consists solely of making a row of three crates, a tongue-in-cheek reference to the Crate Review System featured on that site.
- *Dance With Intensity* clones dance game *Dance Dance Revolution*
- *DominateGame* is an online *Risk*-like game - which is technically adware as only the downloadable version is free and puts up adverts for the 25 euro online version
- *Doukutsu Monogatari* a.k.a "*Cave story*" by *Studio Pixel*. A Metroid style adventure game.
- *Eastside Hockey Manager*, popular hockey manager game that

was so good that it got the creator picked up by SI Games in order to make a commercial sequel.
- *Eternal Daughter*, a Castlevania-esque adventure game
- *Gate88*, an Asteroids RTS game considered one of the best freeware games ever.
- *GunBound*, a free Worms like game
- *Knight Online*, a free-2-play concept MMORPG.
- *Legends* is an Online FPS reminiscent of Tribes
- *Little Fighter 2* is a side-scrolling fighting game
- *MegaZeux is a simple game creation system*
- *Mindgames* is a collection of card, board and miscellaneous games that are primarily puzzle based and varied in objective.
- *N* is a classic platformer game.
- *NetHack* is perhaps the most successful roguelike game ever. Another variant, Slash'EM, is also popular.
- *Nexuiz* is a 3d deathmatch game with over 20 maps and hundreds of online players
- *Orbiter*, a spaceflight simulator with an emphasis on realistic orbital mechanics
- *PlaneShift* is a free, open-source MMORPG in development
- *Pong Kombat* is a spoof of PONG and Mortal Kombat
- *Progress Quest*, a parody of *Everquest* and the MMORPG genre, focuses on pure character building with no interaction involved.
- *Reality-on-the-norm* a bunch of user made adventure games
- *RuneScape* RuneScape is a free 3D Java based Massively Multiplayer Online Role-Playing Game (MMORPG).
- *Simutrans*: a game that focuses on building a transportation network and is similar to *Transport Tycoon*.
- *Smashing Pumpkins into Small Piles of Putrid Debris* (*SPISPOPD*), a 1993 DOS based top down shooter by Jamul software, jokingly based on a *Doom* newsgroup thread.
- *Soldat*, a popular 2D multiplayer online shooter
- *Steel Panthers: World at War*, plus several other remakes of older strategy games from Matrix Games.
- *SPMBT: Steel Panthers Main Battle Tank*
- *SPWW2: Steel Panthers World War 2*
- *SubSpace*, a two-dimensional top-down space shooter game with massively multiplayer capabilities.
- *Vega Strike*, an open-source space combat/trading simulator inspired by *Wing Commander: Privateer* and *Elite*.
- *Wolfenstein: Enemy Territory*, a standalone multiplayer expansion to *Return to Castle Wolfenstein*
- *Wurm Online*, a fantasy MMORPG. Currently in beta, when released it will be more properly considered shareware.

- *YSFlight*, a flight simulator.

Commercial games released as freeware

- Abuse, a 1995 side-scrolling action game by Crack dot Com, released as freeware.
- *Akalabeth* a.k.a "*Ultima 0*" by Lord British.
- *Beneath a Steel Sky* by Revolution Software.
- *Castle of the Winds* a tile based RPG for Windows 3.x, written by SaadaSoft.
- *Castle Infinity*, 1996 release by Starwave.
- *Decisive Battle of WWII: The Ardennes Offensive*, released as freeware by SSG.
- Derek Smart's infamous *Battlecruiser 3000AD*.
- *Dink Smallwood*, 1997 RPG by RTsoft released as freeware on 17 October 1999.
- *Elite* and *Elite Plus*]
- *Flight of the Amazon Queen* by Interactive Binary Illusions.
- *Frederik Pohl's Gateway part 1*, adventure game, based on book by same author.
- *GroundControl*
- *Hidden and Dangerous Deluxe*, a 1999 game by Illusion Softworks.
- *Ken's Labyrinth by Ken Silverman*
- *MegaZeux is a game creation system*
- *One Must Fall: 2097*, (1994) classic fighting game by Diversions Entertaintment.
- *Ports Of Call*.
- *Rise of the Dragon*, 1990 release by Dynamix.
- *Star Control II*, the classic space adventure by Toys for Bob was GPL'ed and renamed as The Ur-Quan Masters.
- *Starsiege: Tribes* and *Tribes 2* were released as freeware May 2004
- *The Elder Scrolls: Arena*, 1994 game that was released as freeware in 2004.
- Lord British's *Ultima IV*
- *Wild Metal*

Games no longer allowed to be distributed

Several commercial games which were distributed for free download years ago are no longer allowed to be distributed.

B-17 Flying Fortress is no longer legal to download.

The Sierra games Betrayal at Krondor, Red Baron 3D & Caesar are also not legal to download.

The Zork games are no longer allowed to be distributed for free. Activision doesn't want them distributed anymore. They forced CNET to remove the games from their page

See also

- MUD
- List of freely downloadable game software
- Free game software

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Free Game Software

Free games are computer games assembled out of free software and open content.

All these titles are free software that are under a license such as the GNU General Public License or other similar licenses. Because the source code is available and modifications can be freely (re)distributed, most of these titles will run on many platforms.

For freely available games without a public license, see List of freeware games.

List of free game software

A

- *Advanced Strategic Command is a turn based strategy based on the Bluebyte Battle Isle series*
- *Arianne* is an open source MMORPG in development and a framework to develop new online games.
- *Armagetron* is a multiplayer, 3D Tron lightcycle racing game.
- *Atlantik* is a multiplayer clone of Monopoly, in which players can pick some of their own rules and use different and uncommon boards.

- *Avanor* is an open source roguelike game.

B

- *Battle for Wesnoth* is an open source strategy game with RPG elements resembling the Battle Isle series, but in a fantasy setting with elves, dwarves, orcs and mermen
- *Beats of Rage* inspiration in the classic Streets of Rage.
- *Blob Wars: Metal Blob Solid* - A platform game where Bob the Blob must rescue the Blob MIAs. Many stages, intricate gameplay.
- *Boson* is an OpenGL real-time strategy game, with the feeling of Command and Conquer or StarCraft. It is designed to run on Unix (Linux) computers, and is built on top of the KDE, Qt and kdegames libraries.
- *Bygfoot* is a football management game.
- *BZFlag* is a free multiplayer multiplatform 3D tank battle game.

C

- *Charred Dirt* is an open source Scorched Earth clone.
- *Chromium B.S.U.* is a fast paced, arcade-style, top-scrolling space shooter
- *ClanBomber* is a free DynaBlaster clone
- *CodeRED: Alien Arena* is a free first person shooter
- *Crack Attack!* is a free OpenGL game based on *Tetris Attack*
- *Crimson Fields* is a tactical war game in the tradition of Battle Isle
- *Crossfire* is an open source MMORPG.
- *Cuyo* is a free Puyo Puyo clone

D

- *Daimonin* is an Isometric MMORPG based on Crossfire in its first Beta.
- *Darwinbots* is an ALife simulator that can also be run as a competitive programming platform.
- *Devet* is a multiplatform strategy/puzzle game
- *Digital Paintball 2* is a paintball Quake II mod in development
- *Dink Smallwood* is an Zelda like rpg with a quirky player identity.

- *Dispatch Of Army* is a First Person Shooter game
- *Dnafight* is a programming game with bacterials using the Seed7 programming language.

E

- *Enigma*, an Oxyd clone with an unusual premise.

F

- *Freeciv* is a clone of the game Civilization.
- *FreeDoom* is an open content Doom game.
- *FreeOrion* is a free Master of Orion-inspired game
- *Frozen Bubble*, can be downloaded
- *FlightGear*, an open-source, multi-platform flight simulator.

G

- *GGZ Gaming Zone* develops game servers and clients and provides online gaming services
- *Glest* is an Real-Time Strategy [RTS] game like Warcraft or Command & Conquer. Linux:
- *Globulation 2* is an innovative Real-Time Strategy RTS, which minimizes micro-management by automatically assigning tasks to the units.

I

- *Iter Vehemens ad Necem* is a graphical roguelike using SDL

K

- Several games are included in KDE; for instance:
  - *KAsteroids*
  - *KAtomic*
  - *KBounce*
  - *Kolf*
  - *KSokoban*

L

- *Lentilwars* is a 2D "quasi-isometric" arcade shooter written in Free Pascal.
- *Liquid War* is a multiplayer wargame

N

- *NetHack* is a popular free RPG
- *Nexuiz* is a highly polished multiplayer first person shooter

O

- *OpenArena* is a First-person shooter based on the GPLed Quake 3 engine
- *Openglad* is a port of the DOS Gauntlet-style game Gladiator

P

- *Panic* - A rewrite of the Apple_Panic game in the Seed7 programming language.
- *Pingus*, a Lemmings clone with animated penguins.
- *Project: Starfighter* - A two-dimensional, non-linear space shooter with an intricate plot.
- *Project Xenocide* - Game inspired by X-Com: UFO Defense (also known as UFO: Enemy Unknown), strategy game in which you take the seat of the commander of a secret organisation to fend off an Alien Invasion.

R

- *Raptor* is a space shoot-em-up game

S

- *Scorched3D*, a game based loosely (or actually quite heavily now) on the classic DOS game Scorched Earth. Available for both Microsoft Windows and Unix (Linux, FreeBSD, Mac OS X, Solaris etc.) operating systems.
- *Smoothris* is a tetris game, featuring vector graphics, smooth movements and rotations of the figure, sub-pixel accuracy and motion blur, all done with software rendering. It is written in Free Pascal.
- *Spice Trade* is an open source (LGPL), Java based adventure/rpg game that can be downloaded (with source code)
- *The Ur-Quan Masters* is an open-source free port of Star_Control_II based on the source code and media files of the 3DO version of the game

- *StepMania* simulates dance games, mainly Dance Dance Revolution.
- *SuperTux* classic 2D jump and run game.
- *Silk Road Online* a free MMORPG, great graphics for its price.
- *Soldat*, a side scrolling shooter. Very versatile in gameplay.

T

- *TAspring*, A 3D RTS (strategy) game that currently uses content from the abandonware Total Annihilation or total conversion mods.
- *Tile World* is a clone of Chip's Challenge made by Brian Raiter.
- *Tux Racer*, a 3D OpenGL racing game starring the Linux mascot.
- *Tyrant*, a graphical Roguelike Java adventure game.

U

- *UFO: Alien Invasion* is a 3D, turn-based strategy game that pits humans against aliens.

V

- *Vega Strike* is a 3D space shooter/strategy game.

W

- *Warsow* is a 3D fast-paced first person shooter based on the qfusion engine.
- *Warzone 2100*, A RTS very different from the standard C&C or Starcraft approach. Developed by Pumpkin Studios and released to the open source community in 2004.

X

- *XEvil*, a 2D side scroller with an excessive amount of violence.
- *XPilot*, a multiplayer asteroids like game, one of the first multiplayer games with good gameplay.
- *XPilot-ng*, a modern version of xpilot with high frame rate, polygons, and opengl support.
-

Freely Downloadable Game Software

Freely downloadable game software applies to computer games that can be legally played and downloaded by users free of charge. It does not necessarily have to be freeware, freely distributable or hosted by sites other than the company that made it, or open source.

Games that are free but suggest a donation or fee, or require purchase for extended play time, new content and other features, are Shareware and merely an example version of a full game, sometimes known as a demo. This list is for freely downloadable, full-version games.

List of free, open-source games

The difference between these and other free games is that they are under a license such as the GNU General Public License or other similar licenses and their source code is freely available and can be modified by anyone with the necessary programming skills and a source code editor program such as the freely available Visual C++ Express. These games are all made exclusively with open content. Because the source code is available and modifications can be freely (re)distributed, most of these titles will run on many platforms.

- *Arianne* is an open source MMORPG in development and a framework to develop new online games.
- *Armagetron* is a multiplayer, 3D Tron lightcycle racing game.
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- *BZFlag* is a free multiplayer multiplatform 3D tank battle game.
- *Chromium B.S.U.* is a fast paced, arcade-style, top-scrolling space shooter
- *Charred Dirt* is an open source Scorched Earth clone that represents the original very well.
- *ClanBomber* is a free DynaBlaster clone
- *CodeRED: Alien Arena*, fully functioned free deathmatch shooter that runs on Windows and Linux, and features standard deathmatch, team deathmatch, capture the flag, and all out assault, in a funky 50's era sci-fi atmosphere.
- *Crack Attack!* is a free OpenGL game based on *Tetris Attack*
- *Crossfire* is an open source MMORPG.
- *Cube* is an open source first person shooter
- *Cuyo* is a free Puyo Puyo clone
- *Daimonin* is an Isometric MMORPG based on Crossfire in its first Beta.
- *Devet* is a multiplatform strategy/puzzle game
- *Enigma*, an Oxyd clone with an unusual premise.
- *Freeciv* is a clone of the game Civilization.
- *FreeDoom* is an open content Doom game.
- *FreeOrion* is a free Master of Orion inspired game
- *Frozen Bubble*, can be downloaded
- *GGZ Gaming Zone* develops game servers and clients and provides online gaming services
- *Glest* is an Real-Time Strategy [RTS] game like Warcraft or Command & Conquer. Linux:
- *Globulation 2* is an innovative Real-Time Strategy [RTS], which minimizes micro-management by automatically assigning tasks to the units.
- *Good vs Bad 2* is a multiplayer fps/rts hybrid.
- *Iter Vehemens ad Necem* is a graphical roguelike using SDL
- Several games are included in KDE, the Kdegames packages; for instance:
    - *KAsteroids*
    - *KAtomic*
    - *KBounce*
    - *Kolf*
    - *KSokoban*
- *Lentilwars* is a 2D "quasi-isometric" arcade shooter written in Free Pascal.
- *Liquid War* is a multiplayer wargame
- *NetHack* is a popular free RPG

- *Nexuiz* is a highly polished multiplayer first person shooter
- *Openglad* is a port of the DOS Gauntlet-style game Gladiator
- *OpenTTD* is an open source implementation of the 1990s classic Transport Tycoon.
- *Pingus*, a Lemmings clone with animated penguins.
- *Project: Starfighter* - A two-dimensional, non-linear space shooter with an intricate plot.
- *Raptor* is a space shoot-em-up game
- *Scorched3D*, a game based loosely (or actually quite heavily now) on the classic DOS game Scorched Earth. Available for both Microsoft Windows and Unix (Linux, FreeBSD, Mac OS X, Solaris etc.) operating systems.
- *Smoothris* is a tetris game, featuring vector graphics, smooth movements and rotations of the figure, sub-pixel accuracy and motion blur, all done with software rendering. It is written in Free Pascal.
- *Spice Trade* is an an open source (LGPL), Java based adventure/rpg game that can be downloaded (with source code)
- *The Ur-Quan Masters* is an open-source free port of Star_Control_II based on the source code and media files of the 3DO version of the game
- *StepMania* simulates dance games, mainly Dance Dance Revolution.
- *SuperTux* classic 2D jump and run game.
- *Tile World* is a clone of Chip's Challenge made by Brian Raiter.
- *Tux Racer*, a 3D OpenGL racing game starring the Linux mascot.
- *Tyrant*, a graphical Roguelike Java adventure game.
- *UFO: Alien Invasion* is a 3D, turn-based strategy game that pits humans against aliens.
- *Vega Strike* is a 3D space shooter/strategy game.
- *XEvil*, a 2D side scroller with an excessive amount of violence.

Freeware games

Freeware refers to software that can be used, downloaded, or distributed free of charge.

It does not refer to games under a Free Software license that allow modifying or redistribution of source code, such as in the list above.

- *123 Free Solitaire*, one of the top stand-alone solitaire downloads on the internet. Yearly editions swap out 4 of the 12 games included. A game option includes being able to change the card-back designs.

- *America's Army*, first-person shooter developed and distributed by US Army
- *Angband* (another popular RPG in the roguelike family), and its many variants. Source code of Angband is also available, but it is not Free software. However, there is an effort ongoing to re-license Angband under the GNU GPL.
- *BVE,* free Railroad Simulator created by Mackoy of Japan.
- *Control Monger* is a free online first person shooter
- Dance With Intensity clones dance game *Dance Dance Revolution*
- *Digital Paintball 2.0* is a fast-paced, team-based, first-person shooter with a variety of game modes and support for up to 4 teams. Modes include Standard CTF, Single-Flag CTF, Siege (Attack/Defend), KOTH (King of the Hill), Elimination, and DM (Free-for-all). It was once a Quake2 mod but is now completely standalone and completely free.
- *DominateGame* is an online *Risk*-like game
- *Doukutsu Monogatari* a.k.a "*Cave story*" by *Studio Pixel*. A Metroid style adventure game.
- *Eastside Hockey Manager*, popular hockey manager game that was so good that it got the creator picked up by SI Games in order to make a commercial sequel.
- *Eternal Daughter*, a Castlevania-esque adventure game.
- *GunBound*, a free Worms like game
- *Kuma\War* is a free online war game that uses cutting-edge game technology to accurately reconstruct real-war events from the news. Kuma\War is a first and third-person squad-based war game. It is the first PC video game to bring the tactical FPS (shooter) into the 21st century by modeling missions on actual real-world events. Each month players get new single player and multiplayer games (missions), to reflect unfolding events around the world. Armed with identical weapons in a realistic re-creation of various locations, you'll experience some of fiercest engagements in the most hostile territories in the world. A vast database of intelligence accompanies Kuma\War online games: satellite photos, political context, event details and the weaponry, tactics and forces involved. You'll also get exclusive video news shows and insight from a decorated team of military veterans.
- *liero* is a 2D shooting game where players control worms to defeat either a CPU controlled worm or another player on the same keyboard, the game allows you to create maps and then battle out against your enemy with a selection of your 5 favourite weapons, including miniguns, remote control missile launchers, fans(to deflect bullets) and nukes.

- *liero xtreme* is a sequel and fan re-make of liero, it is probably the most prefered liero re-make, featuring online gaming, mods, better maps, and up to 8 players at once.
- *Little Fighter 2* is a side-scrolling fighting game
- *Mindgames* is a collection of card, board and miscellaneous games that are primarily puzzle based and varied in objective.
- *N* is a classic platformer game.
- *Nethack* is a roguelike for a variety of operating systems.
- *Orbiter*, a spaceflight simulator with an emphasis on realistic orbital mechanics
- *PlaneShift* is a freely available and Open Source MMORPG in development.
- *Pong Kombat* is a freely avalible parody of Pong and Mortal Kombat
- *Progress Quest*, a parody of *Everquest* and the MMORPG genre, focuses on pure character building with no interaction involved.
- *Project Entropia* is a massive virtual universe with a real cash economy. It is not, officially, an MMORPG however it has most of the elements of one being in that it is mainly an number ('skills') and special item chasing exercise. You can get paid back real money for actions in the game, however this is mainly from guessing locations for 'minerals in-game and similar to gambling the payback is always much less than you are required to put in (you will not be able to gain any items or do much except explore and talk in the game without putting real money into your game account as 'PEDs' via a credit card).
- *Reality-on-the-norm* a bunch of user made adventure games
- *Simutrans*: a game that focuses on building a transportation network and is similar to *Transport Tycoon*.
- *Smashing Pumpkins into Small Piles of Putrid Debris* (*SPISPOPD*), a 1993 DOS based top down shooter by Jamul software, jokingly based off a *Doom* newsgroup thread.
- *Soldat*, a popular 2D multiplayer online shooter
- *Starsiege: Tribes* (usually called ***Tribes*** or *Tribes 1*) is a sci-fi first-person shooter (FPS) computer game, the first of the Tribes video game series. It was developed by Dynamix and published by the company now known as Sierra Entertainment in 1998. Tribes was one of the first online-only games of its kind and sported several multiplayer features that other games have only recently included (32+ player support, 128 players max, troop transport vehicles, several different player classes). Most of the standard maps were outdoors in a variety of climates, from sunshine to snow and hail. In general, bases were scattered throughout the map depending on the gametype. The outdoor

environments were and still are relatively huge extending for several Km in any direction, but "jetting" and "skiing" gave *Tribes* a fast-paced feel.

- *Steel Panthers: World at War* , plus several other remakes of older strategy games from Matrix Games.
- *SPMBT: Steel Panthers Main Battle Tank*
- *SPWW2: Steel Panthers World War 2*
- *SubSpace*, a two-dimensional top-down space shooter game with massively multiplayer capabilities.
- *Vega Strike*, an open-source space combat/trading simulator inspired by Wing Commander: Privateer and Elite.
- *Wolfenstein: Enemy Territory*, a standalone multiplayer expansion to *Return to Castle Wolfenstein*.
- *Wulfram 2* is a hybrid genre massively multiplayer online first-person shooter, massively multiplayer online real-time strategy, and simulation game currently being developed by Bernt Habermeier and published under the name SlurpySoft (Slurpy is the pen-name/callsign of Bernt Habermeier) using an original source code developed by Bolt-Action Software, of which Bernt Habermeier was a co-founder. Wulfram 2 is one of four known games to be developed by Bolt-Action Software, and is the only one still playable. Notable is the fact that Wulfram 2 is free to play, though the administration is accepting donations from the player-base and offering certain non-gameplay related benefits for it.

Commercial games released as freeware

- Abuse, a 1995 side-scrolling action game by Crack dot Com, released as freeware.
- *Akalabeth* a.k.a "*Ultima 0*" by Lord British.
- *Beneath a Steel Sky* by Revolution Software.
- *Castle of the Winds* a tile based RPG for Windows 3.x, written by SaadaSoft.
- *Castle Infinity*, 1996 release by Starwave.
- *Decisive Battle of WWII: The Ardennes Offensive*, released as freeware by SSG.
- Derek Smart's infamous *Battlecruiser 3000AD*.
- *Dink Smallwood*, 1997 RPG by RTsoft released as freeware on 17 October 1999.
- *Elite* and *Elite Plus*.
- *Flight of the Amazon Queen* by Interactive Binary Illusions.

- *Frederik Pohl's Gateway part 1*, adventure game, based on book by same author.
- *GroundControl*
- *Hidden and Dangerous Deluxe*, a 1999 game by Illusion Softworks.
- *Ken's Labyrinth by Ken Silverman*
- *MegaZeux is a game creation system*
- *One Must Fall: 2097*, (1994) classic fighting game by Diversions Entertaintment.
- *Ports Of Call.*
- *Rise of the Dragon*, 1990 release by Dynamix.
- *Star Control II*, the classic space adventure by Toys for Bob was GPL'ed and renamed as The Ur-Quan Masters.
- *Starsiege: Tribes* and *Tribes 2* were released as freeware May 2004
- *The Elder Scrolls: Arena*, 1994 game that was released as freeware in 2004.
- Lord British's *Ultima IV*
- *Wild Metal*

Games which used to be freeware but can no longer be distributed

Several commercial games which were distributed for free download years ago are no longer allowed to be distributed or are longer legal to download

B-17 Flying Fortress
Betrayal at Krondor
Caesar
The Zork series

See also

- MUD
- List of freeware games
- Free game software

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Game Classification

Games may be classified and sub-classified according to many different criteria. Each scheme has its own advantages and disadvantages.

- What sort of **challenge / skill** is involved (e.g. abstract calculation, anagramming, luck, bluffing, verbalizing, coordination, speed, etc.)?

  This leads to the "Folk Model" theory of 4 categories: games of skill, games of chance, games of strategy, Simulation game propagated by Anderson/Moore and Brian Sutton-Smith. This scheme is probably most natural, and quite neatly separates billiards from chess from Tomb Raider. The main disadvantage is that too many games fall under more than one head. For example Scrabble relies a great deal on word knowledge and anagramming, but also has significant strategic aspects.

  Games of skill can be further subdivided into physical-skill games and mental-skill games.

- What **equipment** is used to play the game (e.g. a computer, a board, cards, tiles, dice, etc.)?

  This categorization is also very natural and common, but sometimes problematic. For example, Balderdash is a commercial board game, whereas Fictionary is almost identical but uses no board.

  This scheme seems odd since it forces similar games to be listed under completely different headings.

Other distinctions are less important, and apply more or less well to different major headings.

For example, the difference between team and individual sports is fundamental, whereas team board games are so rare as to hardly merit a category. The remaining distinctions apply mostly to non-physical games.

- **How many players** does the game accommodate?

  The most important division is between two-player and multiplayer games, because nearly all multiplayer games involve negotiation or coalition-building to some degree. Among multiplayer games it is also important (particularly to whoever is organizing the party) what range in the number of players can be accommodated. One disadvantage of this distinction is that a few games such as Titan are equally good two-player or multiplayer.

- To what extent to which **chance** is a factor?

  Games run the gamut from having no chance whatsoever (checkers, Pente) to being entirely determined by chance (roulette, Chutes and Ladders).

- How deep is the **strategy**?

  Some games (bridge, Go) can be studied for years without exhausting what there is to learn, whereas others (Three Men's Morris) can be mastered relatively easily.

- **How easy** is it to learn the **rules** of the game?

  Chess and Go are often compared for their depth and abstraction, but chess has considerably more difficult rules. This consideration is particularly important for family games, where ideally children should be able to play along easily, without making the game so simple it holds no interest for adults.

- Is the game relatively **abstract** or does it attempt to simulate some aspect of reality (e.g. stock market, war scenarios)?

  For some simulation games, the realism is more important than all other factors, whereas some games (Set) are so abstract that the names and shapes of all the pieces could change without affecting playability. However, most games lie somewhere in between, with a balance between abstraction and simulation.

- **Are players eliminated** as the game progresses, or can everyone play along until the end?

  This is most important socially, as a host may wonder how to entertain guests who have been knocked out of the main event.

- What is the **objective** of the game?

  This is most useful as a sub-subheading, because different types of games tend to have different types of objectives. For example, card games have natural categories of trick-taking and shedding games, which don't apply to board games, whereas board games have categories of capture, racing, and immobilization which don't apply to card games.

Home | Challenge/skill Games | Equipment | One-person Games | Other Games

Challenge/skill Games

Home | Up | Games of Skill | Games of Chance | Games of Strategy | Simulation Games

Games of Skill

A **game of skill** is a game where the outcome is determined mainly by mental and/or physical skill, rather than by pure chance.

One benefit of games of skill is that they are a means of exploring one's own capabilities. Games encourage people to look at, understand, and experience things. They teach people lessons about themselves and possibly the world, and allow such insights to be passed on to others.

- Board games
- Card games
- Educational games
- Letter games
- Mind sports
- Mathematical games
- Play-by-mail games
- Puzzle games
- Guessing games
- Pencil and paper games
- Word games
- Online skill-based games
- Games of physical skill

See also

- Game classification
- Computer and video games

Board Games

A **board game** is any game played on a board (that is, a premarked surface) with counters or pieces that are moved across the board. Simple board games are often seen as ideal "family entertainment" as they can provide entertainment for all ages. Some board games, such as Chess, Oware, or Go, have intense strategic value and have become lasting classics.

There are many different types and classifications of board games. Some games are simplified simulations of real life. These are popular for they can intermingle make-believe and role playing along with the game. Popular games of this type include Monopoly, which is a rough simulation of the real estate market, Clue (in Canada and the U.S.) or Cluedo (internationally), which is based upon a murder mystery, and Risk which is one of the most well known of thousands of games attempting to simulate warfare and geo-politics.

Other games only loosely, or do not at all, attempt to imitate reality. These include abstract strategy games like chess and checkers, word games, such as *Scrabble*, and trivia games, such as *Trivial Pursuit*.

History

Board games have a long history and have been played in most cultures and societies; some even pre-date literacy skill development in the earliest civilizations. A number of important historical sites, artifacts and documents exist which shed light on early board games. The most of important of these include:

Senet has been found in Predynastic and First Dynasty burials of Egypt, c. 3500 BC and 3100 BC respectively [1]. Senet is the oldest board game known to have existed. Also see Okno do svita deskovych her for a photo of the actual fresco found in Merknera's tomb (3300-2700 BC).

Mehen is another ancient board game from Predynastic Egypt.

The Royal Tombs of Ur contained, among others, the Royal Game of Ur. They were excavated by C. Leonard Woolley, but his books

document little on the games found. Most of the games he excavated are now housed in the British Museum in London.
Buddha games list is the earliest known list of games.

Timeline

3500 BC - Senet found in Predynastic Egyptian burials [2]; also depicted in the tomb of Merknera.
3000 BC - Mehen, board game from Predynastic Egypt, played with lion-shaped game pieces and marbles.
2560 BC - Board of the Royal Game of Ur (found at Ur Tombs)
2500 BC - Paintings of Senet and Han being played made in the tomb of Rashepes
2000 BC - Drawing in a tomb at Benihassan depicting two unknown board games being played (depicted in Falkner). It has been suggested that the second of these is Tau.
1500 BC - Liubo carved on slab of blue stone. Also painting of Board Game of Knossos.
1400 BC - Game boards including Alquerque, Three Men's Morris, Nine Men's Morris, and a possible Mancala board etched on the roof of the Kurna Temple. (Source: Fiske, and Bell)
200 BC - A Go board pre-dating 200 BC was found in 1954 in Wangdu County. This board is now in Beijing Historical Museum. (Source: John Fairbairn's Go in Ancient China).
116 - 27 BC - Marcus Terentius Varro's Lingua Latina X (II, par. 20) contains earliest known reference to latrunculi (often confused with Ludus Duodecim Scriptorum, Ovid's game mentioned below).
79 - 8 BC - Liu Xiang's (‰) Shuo yuan, contains earliest known reference to Xiangqi.
1 BC-8 AD Ovid's Ars Amatoria contains earliest known reference to Ludus Duodecim Scriptorum and the smaller merels.
220-265 Nard enters China under the name t'shu-p'u (Source: Hun Tsun Sii)

Board games first became widely popular among the general population early in the 20th century when the rise of the middle class with disposable income and leisure time made them a receptive audience to such games. This popularity expanded after the Second World War, a period from which many classic board games date. Computer games are closely related to board games, and many acclaimed computer games such as Civilization are based upon board games.

Many board games are now available as computer games, including the option to have the computer act as an opponent. The rise of computers has also led to a relative decline in the most complicated board games, as they require less space, and are easier to set up and clear away. With the Internet, many board games can now be played online against computer or other players in real time (like to classics board games available on Yahoo, Lycos and other big Internet sites) or during your spare time, every time it's your turn (see the links at the end of this article).

The modern board game industry is rife with corporate mergers and acquisitions, with large companies such as Hasbro owning many subsidiaries and selling products under a variety of brand names. It is difficult to successfully market a new board game to the mass market. Retailers tend to be conservative about stocking games of untested popularity, and most large board game companies have established criteria that a game must meet in order to be produced. If, for instance, Monopoly were introduced as a new game today, it would not meet the criteria for production.

Luck, strategy and diplomacy

One way of defining board games are between those based upon luck and strategy. Some games, such as chess, have no luck involved. Children's games tend to be very luck based with games such as Sorry! having virtually no decisions to be made. Most board games have both luck and strategy. A player may be hampered by a few poor rolls of the dice in Risk or Monopoly, but over many games a player with a superior strategy will win more often. While some purists consider luck to not be a desirable component of a game, others counter that elements of luck can make for far more complex and multi-faceted strategies as concepts such as expected value and risk management must be considered. Still most adult game players prefer to make some decisions during play, and find purely luck based games such as Top Trumps quite boring.

The third important factor in a game is diplomacy, or players making deals with each other. A game of solitaire, for obvious reasons, has no player interaction. Two player games usually don't have diplomacy, as cooporation between the two players does not occur. Thus, this generally applies only to games played with three or more people. An important facet of Settlers of Catan, for example, is convincing people to trade with you rather than with other players. In Risk, one example of diplomacy's effectiveness is when two or more players team up against another. Easy diplomacy consists of convincing other players that someone else is winning and should therefore be teamed up against. Difficult diplomacy (such as in the aptly named game Diplomacy) consists of making elaborate plans together, with possibility of betrayal.

Luck is introduced to a game by a number of methods. The most popular is using dice, generally six sided. These can determine everything from how many steps a player moves their token, as in Monopoly, how their forces fare in battle, such as in Risk, or which resources a player gains, such as in Settlers of Catan. Other games such as Sorry! use a deck of special cards that when shuffled create randomness. Scrabble does something similar with randomly picked letters. Other games use spinners, timers of random length, or other sources of randomness. Trivia games have a great deal of randomness based on which question a person gets. German-style board games are notable for often having rather less luck factor than in many North American board games.

Common terminology

Although many board games have a jargon all their own, there is a generalized terminology to describe concepts applicable to basic game mechanics and attributes common to nearly all board games.

- **Gameboard** (or **board**) — the (usually quadrilateral) surface on which one plays a board game; the namesake of the board game, gameboards are a necessary and sufficient condition of the genre

- **Game Piece** (or **token** or **bit**) — a player's representative on the game board. Each player may control one or more game pieces. In some games that involve commanding multiple game pieces, such as chess, certain pieces have unique designations and capabilities within the parameters of the game; in others, such as Go, all pieces controlled by a player have the same essential capabilities.

- **Jump** — to bypass one or more game pieces and/or **spaces**. Depending on the context, **jumping** may also involve capturing or conquering an opponent's game piece. (*See also:* Game mechanic: Capture)

- **Space** (or **square**) — a physical unit of progress on a gameboard delimited by a distinct border (*See also:* Game mechanic: Movement)

References

Fiske, Willard. Chess in Iceland and in Icelandic Literature—with historical notes on other table-games). Florentine Typographical Society, 1905.
Falkener, Edward. Games Ancient and Oriental, and How To Play Them. Longmans, Green and Co., 1892.
Austin, Roland G. "Greek Board Games." Antiquity 14. September 1940: 257–271
Murray, Harold James Ruthven. A History of Board-Games Other Than Chess. Gardners Books, 1969.
Bell, Robert Charles. The Boardgame Book. London: Bookthrift Company, 1979.
Bell, Robert Charles. Board and Table Games from Many Civilizations. Mineola, New York: Dover Publications, 1980. ISBN 0486238555
Reprint: New York: Exeter Books, 1983.
Sackson, Sid. A Gamut of Games. Arrow Books, 1983. ISBN 0091533406
Reprint: Dover Publications, 1992. ISBN 0-486-27347-4
Schmittberger, R. Wayne. New Rules for Classic Games. John Wiley & Sons, 1992. ISBN 0-471-53621-0
Reprint: Random House Value Publishing, 1994. ISBN 0517129558
Parlett, David. Oxford History of Board Games. Oxford University Press, 1999. ISBN 0192129988

Note that some these works may suffer from cultural bias—especially Murray's work which, despite being the standard reference, tends to assume Western cultural superiority.

See also

- List of board games
- Card game
- Game classification
- Game mechanic
- Game theory
- Gameplay
- Paper and pencil games
- Parlour game
- Party game

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Abstract Strategy Games

An **abstract strategy game** is a board game with perfect information, no chance, and (usually) two players. Many of the world's classic board games, including chess, go, and mancala, fit into this category. Play is sometimes said to resemble a series of puzzles the players pose to each other.

The "No Chance" Criterion

Although most purists believe that Abstract Strategy games cannot have any random elements, this criterion tends to be relaxed in most pragmatic classifications of games. Games such as Backgammon, Octiles, Can't Stop, or Sequence have all been termed "Abstract Strategy" at some point or another, despite their strong luck element (and even some hidden information)! The pragmatic definition seems to be that if a game is strategic and is abstract, the term Abstract Strategy should be applicable, but this irritates purists, as the analyses of such games are necessarily different.

(The analysis of a "pure" Abstract Strategy game tends to fall under Combinatorial Game Theory, while "pragmatic" abstract strategy games with luck elements are better served by Von Neumann-Morgenstern Game Theory.)

It is often pointed out that in almost all Abstract Strategy games there is still a chance element in the set-up; a game can often have many different set-ups, and certainly in practice a starting player needs to be chosen, and this is often by non-deterministic means. However, purists would tend to consider this is simply playing one of a class of highly-related games, and therefore the individual game still has no luck element.

List of Abstract Strategy games

Chess and Chess-like games

Chaturanga
Western Chess
Jangki (Korean Chess)
Makruk (Thai Chess)
Shogi
  Shogi variants
Xiangqi
Janggi
Other Chess-like games

Paper and Pencil Games

- Dots and Boxes
- Noughts and Crosses, also known as Tic-Tac-Toe

Other Games

Abalone
Alak
Alquerque
The Game of the Amazons (also known as Amazons)
Andantino
Arimaa
Ataxx
Blokus
Breakthrough
Cathedral
Chinese Checkers
Connect Four
Crossings
Death Stacks
Draughts (also known as Checkers)
Entropy (1977 and 1994 games)
Epaminondas
Fanorona
Five Field Kono
Focus
Fox games, such as Foxes and geese
The Gipf project games:
 Gipf
 Tamsk
 Zèrtz
 Dvonn
 Yinsh
 Pünct
Go
Gobblet
Gomoku - played on a Go board; can be played as a "paper and pencil game", since once played, a piece cannot be moved or removed from play.
Gonnect
Gounki
Halma

Havannah
Hex
Hijara
Jungle
Kensington
L Game
Lines of Action
Lotus
Mak-yek
Malaika
Mancala and related games
Martian Chess (for two to six players)
Morris - Three, Six and Nine Men's Morris
Mozaic
Nim
Ninuki-renju
Orbit
Othello, also known as Reversi
Pente
Phutball
Quarto
Qubic
Quoridor
Renju
Rhumb Line
Rubik's Infinity
Rubik's Magic Strategy Game
Rhythmomachy
Spangles
Tafl games
Tanbo
Teeko
Terrace
Three Musketeers
Thud
Trax
Turnabout
TwixT
Y

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List of Board Games

This is a list of board games. This page classifies board games according to the concerns which might be uppermost for someone organizing a gaming event or party. See the article on game classification for other alternatives.

Two-player abstract strategy games

In abstract strategy games, players know the entire game state at all times, and random generators such as dice are not used.

Classic two-player abstract strategy games

Alquerque
Chaturanga and its descendants:
  Chess
  Jangki (Korean Chess)
  Makruk (Thai Chess)
  Shogi (Japanese Chess)
  Xiangqi (Chinese Chess)
Draughts or Checkers
Fox and geese
Go
Gomoku
Hnefatafl
Mak-yek
Mancala and the numerous games of this family
Three, Six and Nine Men's Morris
Rhythmomachia
Bagha-Chall

Modern two-player abstract strategy games

Abalone (board game)
Alak
Andantino
Arimaa
Ataxx
Breakthrough
Cathedral
Check Lines
Chinese checkers
Connect Four

Connect6
Crossings
Death Stacks
Entropy (1977 and 1994 games)
Epaminondas
Fanorona
Five Field Kono
The Game of the Amazons
Ghost Game
The Gipf project games:
Gipf
Tamsk
Zèrtz
Dvonn
Yinsh
Gobblet
Gonnect
Gounki
Halma
Havannah
Heads or Tails
Hex
Hexplode — an ingenious game originally designed for the BBC Micro computer.
Hexxagon
Hijara
Kensington
King's Mate (Ruin Mist)
L Game
Lasca
Lines of Action
Lotus
Malaika
Martian Chess (for two to six players)
Mozaic
Ninuki-renju
Orbit
Pente
Phutball
Quads
Quarto
Qubic
Quoridor
Reversi (Othello)

Rhumb Line
Spangles
Tanbo
Teeko
Terrace
Three Musketeers
Thud
Turnabout
Trax
TwixT
Y

Two-player games of chance

Backgammon
Battleship
CooperYoung (aka InterSect)
Liu po
Ludo
Mastermind
Mozaic
Parcheesi and the other Cross and Circle games
Senet
Space Hulk
Stratego
Sugoroku

Multi-player elimination games

Participants are typically eliminated before game end.

Anti-Monopoly
Axis & Allies
Blokus
Blue Max
Crash! The bankrupt game
Diplomacy
Family Business
Monopoly
Risk
TEG - Plan Táctico y Estratégico de la Guerra
Titan
Solarquest

Summit
Viktory
Poleconomy

European race games

Circle of Knowledge
Detroit-Cleveland Grand Prix
Formula Dé
Galopp Royal
Game of the Goose
Game of Japan
Great Baloon Race
Hare and Tortoise
Jeu du Grand-Homme
Mississippi Queen
Peter Rabbit's Race Game
Round the World with Nellie Bly
Streetcar
The Sun of Brunswick
Tour of Europe
Um Reifenbreite
Warhamster Rally
Yucata'

Multiplayer games without elimination

Everyone can play along to the end. These games are especially suited for mixed play with adults and children.

18XX
À la carte
Acquire
Adel Verpflichtet
Afrikan tähti
Aladdin's Dragons
Alhambra
Das Amulett
Amun Re
Atlantis
Attribute
Attika
Auf Achse

Barbarossa
Basari
Bauernschlau
Billabong
Bohnanza
Break the Safe
The Bridges of Shangri-La
Buzzle
Café International
Campanile
Can't Stop
Canyon
Capitol
Carcassonne
Careers
Carolus Magnus
Cartagena
Casablanca
Chameleon
Chinatown
Civilization
Clans
Cluedo (also known as Clue)
Coloretto
Columbus
Crayon Rails
Cosmic Encounter
Debate This
Dicke Kartoffeln
Domaine
Drunter und Drüber
Dschunke
Duftende Spuren
Ein Solches Ding...
El Grande
Elfenland
Enchanted Forest
Entdecker
Evo (elimination is technically possible but unlikely)
Extrablatt
Favoriten
Fearsome Floors
Fireball Island
Fische Fluppen Frikadellen

Flying Dutchman
Flusspiraten
Forus
Freebooter
Get the Goods
Giganten
Girl Talk
Goa
Gold Rush
Goldland
Die Händler
Hansa
The Game of Life
Hattrick
High Society
Highlanders
History of the World
Holiday AG
Ingenious
Intrige [sic]
Jagd der Vampire
Java
Junta
Kill Doctor Lucky
Kingdoms
Knock Out
La Cittá
Landslide — the ultimate game of presidential politics
Lost Cities
Löwenherz
Die Macher
Maharaja
Manhattan
Manitou
Marracash
Master Labyrinth
Medici
Medieval Merchant
Medina
Merchant of Venus
Merchants of Amsterdam
Mexica
Mine a million — Dig for minerals, transport to town and get rich...
Minos

The Mob
Modern Art
Mole in the Hole
Nautilus
Neolithibum
New England
Paris Paris
Pay Day
Personal Preference
Pfusch
Pirate's Cove
Pizarro & Co.
Prendi e porta a casa
Primordial Soup
Princes of Florence
Prosperity
Pueblo
Puerto Rico
Quo Vadis?
RA
Rail Baron
Ramses II
Razzia
Rette Sich wer Kann
Rheinlander
Rivers, Roads & Rails
Robo Rally
Römer
Rummikub
Saint Petersburg
Samurai
San Marco
Settlers of Catan
Schraumeln
Schweinsgalopp
Scotland Yard
Scrabble
Serenissima
Seven Deadly Sins
Sherlock Holmes Consulting Detective
Showmanager
Spiel der Türme
Sternen Himmel
Sticheln

Stock Ticker
Super Quiz
Taj Mahal
Tal der Könige
Take it Easy
Terra X
Through the Desert
Ticket to Ride
Tigris & Euphrates
Tikal
Timberland
Top Secret Spies
Torres
Totopoly
Tracks to Telluride
Traders of Genoa
TransAmerica
Tutankhamen
Tycoon (board game)
Union Pacific
Vernissage
Verräter
Vinci
Was Sticht?
Web of Power
Wind & Wetter
Zombies!!!

Games of physical skill

Coordination, finesse, or other physical skills are necessary.
Carabande
Caroms
Chapayev
Crokinole
Jenga
Operation.
Subbuteo
Villa Paletti

Children's games

The rules are easy to learn and the outcome mostly or entirely due to chance.

Ab Die Post!
Candy Land
Chicken Cha Cha Cha
Hallo Dachs!
Hey Pa! There's a Goat on the Roof
Hungry Hungry Hippos
Husch Husch kleine Hexe
Loopin' Louie
Ludo
Mouse Trap
Piepmatz
Die Ritter von der Haselnuß
Snakes and ladders
Sorry
Verflixt Gemixt

Generic game sets

These are sets used to play various board games.

Icehouse pieces
Piecepack

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Card Games

A **card game** is any game using playing cards, either traditional or game-specific.

Seating of players

When a card game is played, the players arrange themselves in a circle around a horizontal surface on which the cards will be played. This surface is usually a table, although any flat surface can be used. The players face inwards, and are approximately evenly spaced (so that they cannot see each other's hand of cards).

The pack or deck

A card game is played with a pack of cards intended for that game. The pack consists of a fixed number of pieces of printed cardboard known as *cards*. The cards in a pack are identical in size and shape. Each card has two sides, the *face* and the *back*. The backs of the cards in a pack are indistinguishable. The faces of the cards in a pack may all be unique, or may include duplicates, depending on the game. In either case, any card is readily identifiable by its face.

The set of cards that make up the pack will be known to all of the players using that pack.

Pack is British English; *deck* is U.S. English. They mean the same thing.

However, there are some card games that require multiple decks. In this scenario, a "deck" refers to a set of 52 cards or a single deck, while a "pack" refers to the collection of "decks" as a whole.

The deal

Dealing is done either clockwise or counterclockwise. If this is omitted from the rules, then it should be assumed to be:

- clockwise for games from North America, North and West Europe and Russia;
- counterclockwise for South and East Europe and Asia, also for Swiss games and all Tarot games.

A player is chosen to deal. That person takes all of the cards in the pack, stacks them together so that they are all the same way up and the same way round, and shuffles them. There are various techniques of shuffling, all intended to put the cards into a random order. During the shuffle, dealer holds the cards so that she and the other players cannot see any of their faces.

Shuffling should continue until the chance of a card remaining next to the one that was originally next to is small. In practice, many dealers do not shuffle for long enough to achieve this.

After the shuffle, the dealer offers the deck to another player to *cut the deck*. If the deal is clockwise, this is the player on her right; if counter-clockwise, it is the player on her left. The invitation to cut is made by placing the pack, face downward, on the table near the player who is to cut: who then lifts the upper portion of the pack clear of the lower portion and places it alongside. The formerly lower portion is then replaced on top of the formerly upper portion.

The dealer then *deals* the cards. This is done by dealer holding the pack, face-down, in one hand, and removing cards from the top of it with her other hand to distribute to the players, placing them face-down on the table in front of the players to whom they are dealt. The rules of the game will specify the details of the deal. It normally starts with the players next to the dealer in the direction of play (left in a clockwise game; right in an anticlockwise one), and continues in the same direction around the table. The cards may be dealt one at a time, or in groups. Unless the rules specify otherwise, assume that the cards are dealt one at a time. Unless the rules specify otherwise, assume that all the cards are dealt out; but in many games, some remain undealt, and are left face down in the middle of the table, forming the talon, skat, or stock. The player who received the first card from the deal may be known as eldest hand, or as forehand.

The set of cards dealt to a player is known as his or her *hand*.

Throughout the shuffle, cut, and deal, the dealer should arrange that the players are unable to see the faces of any of the cards. The players should not try to see any of the faces. Should a card accidentally become exposed (visible to all), then normally any player can demand a redeal - that is, all the cards are gathered up, and the shuffle, cut and deal are repeated. Should a player accidentally see a card (other than one dealt to herself) she should admit this.

It is dishonest to try to see cards as they are dealt, or to take advantage of having seen a card accidentally.

When the deal is complete, all players pick up their cards and hold them in such a way that the faces can be seen by the holder of the cards but not the other players. It is helpful to fan one's cards out so that (if they have corner indices) all their values can be seen at once. In most games it is also useful to sort one's hand, rearranging the cards in a way appropriate to the game. For example in a trick taking game it is easier to have all one's cards of the same suit together, whereas in a rummy game one might sort them by rank or by potential combinations.

The rules

A new card game starts in a small way, either as someone's invention, or as a modification of an existing game. Those playing it may agree to change the rules as they wish. The rules that they agree on become the "house rules" under which they play the game. A set of house rules may be accepted as valid by a group of players wherever they play. It may also be accepted as governing all play within a particular house, café, or club.

When a game becomes sufficiently popular, so that people often play it with strangers, there is a need for a generally accepted set of rules. This is often met by a particular set of house rules becoming generally recognised. For example, when whist became popular in 18th-century England, players in the Portland Club agreed on a set of house rules for use on its premises. Players in some other clubs then agreed to follow the "Portland Club" rules, rather than go to the trouble of codifying and printing their own sets of rules. The Portland Club rules eventually became generally accepted throughout England.

There is nothing "official" about this process. If you decide to play whist seriously, it would be sensible to learn the Portland Club rules, so that you can play with other people who already know these rules. But if you only play whist with your family, you are likely to ignore these rules, and just use what rules you choose. And if you play whist seriously with a group of friends, you are still perfectly free to devise your own set of rules, should you want to.

It is sometimes said that the "official" or "correct" sets of rules governing a card game are those "in Hoyle". Edmond Hoyle was an 18th-century Englishman who published a number of books about card games. His books were popular, especially his treatise on how to become a good whist player. After (and even before) his death, many publishers have taken advantage of his popularity by placing his name on their books of rules. The presence of his name on a rule book has no significance at all. The rules given in the book may be no more than the opinion of the author.

If there is a sense in which a card game can have an "official" set of rules, it is when that card game has an "official" governing body. For example, the rules of tournament bridge are governed by the World Bridge Federation, and by local bodies in various countries such as the ACBL in the USA, and the EBU in England. The rules of skat in Germany are governed by the Deutsche Skatverband which publishes the *Skatordnung*. The rules of French tarot are governed by the Fédération Française de Tarot. But there is no compulsion to follow the rules put out by these organisations. If you and your friends decide to play a game by a set of rules unknown to the game's official body, you are doing nothing illegal.

Many widely-played card games have no official regulating body. An example is Canasta.

Rule infractions

An infraction is any action which is against the rules of the game, such as playing a card when it is not one's turn to play and the accidental exposure of a card.

In many official sets of rules for card games, the rules specifying the penalties for various infractions occupy more pages than the rules specifying how to play correctly. This is tedious, but necessary for games that are played seriously. Players who intend to play a card game at a high level generally ensure before beginning that all agree on the penalties to be used. When playing privately, this will normally be a question of agreeing house rules. In a tournament there will probably be a tournament director who will enforce the rules when required and arbitrate in cases of doubt.

If a player breaks the rules of a game deliberately, this is cheating. Most card players would refuse to play cards with a known cheat. The rest of this section is therefore about accidental infractions, caused by ignorance, clumsiness, inattention, etc.

As the same game is played repeatedly among a group of players, precedents build up about how a particular infraction of the rules should be handled. E.G. "Sheila just led a card when it wasn't her turn. Last week when Jo did that, we agreed ... etc.". Sets of such precedents tend to become established among groups of players, and to be regarded as part of the house rules. Sets of house rules become formalised, as described in the previous section. Therefore, for some games, there is a "proper" way of handling infractions of the rules. But for many games, without governing bodies, there is no standard way of handling infractions.

In many circumstances, there is no need for special rules dealing with what happens after an infraction. As a general principle, the person who broke a rule should not benefit by it, and the other players should not lose by it. An exception to this may be made in games with fixed partnerships, in which it may be felt that the partner(s) of the person who broke a rule should also not benefit. The penalty for an accidental infraction should be as mild as reasonable, consistent with there being no possible benefit to the person responsible.

Types of card games

Trick-taking games

See also trick-taking games

500
Cassino
Bridge
Écarté
Euchre
Hearts
Pinochle
Piquet

ROOK
Spades
Sixty-three
Sueca (game)
Whist
Wizard
Pairs(u/c)
list of trick-taking games

Rummy-style games

500 Rum
Canasta
Concentration
Durak
Five Crowns
Gin rummy
Go Fish
Haihowak
Happy Families
Jolly
Kemps
Robbers' rummy
Seven Bridge
Shanghai rum
Spoons/donkey
Tonk
Tri
Wyatt Earp
Steal the old man's pack

Casino or gambling card games

See also casino or gambling
Baccarat
Bingo
Blackjack
Blind Hookey
Bouré
Cribbage
Poker
Primero
Red dog

Texas hold 'em
Thirty-one
Three card brag

Solitaire (or *Patience*) games

See also Solitaire
Ace of the Pile
Baker's Dozen (solitaire)
Calculation
Concentration
FreeCell
Kings in the Corner (multi-player)
Klondike
Russian Bank
Solitaire Showdown

Shedding games

Bartok / Bartog
Bullshit
California Speed
Chase the Ace/Old Maid
Craits
Crazy Eights
Eleusis
Mao
President
Shichi Narabe
Shithead
Spit / Speed
Spite and Malice
Tien len
UNO

Accumulating games

Beggar-My-Neighbour
Egyptian Ratscrew
Seven Spades
Slapjack
Snap
Top Trumps

War

Miscellaneous playing card games

- Sevens

Multi-genre games

Eleusis
Poke
Skitgubbe
Tichu
Tripoli

Collectible card games (CCG's)

see also collectible card game
List of collectible card games
Duelmasters
Magic: The Gathering
Pokémon
Yu-Gi-Oh! Trading Card Game

Other card games

1000 Blank White Cards
Blitz
Bohnanza
Chez Geek
Chrononauts
Flinch
Fluxx
GOLF
Gother Than Thou
Grass
Hanafuda
Illuminati
Karuta
Lucky Seven
Mille Bournes
Munchkin
Mus

Numero
Pens
Pit
Pits
Scopa
Scopone
Set
Sheepshead
LeCardo

Fictional card games

Cripple Mr Onion - from the Discworld book series
Diamondback - from the Cerebus comics
Double Fanucci - from the Zork series
Dragon Poker - from the MythAdventures novels
Fizzbin - from the original Star Trek
Pazzak - from the Knights of the Old Republic video game
Pyramid - from the Battlestar Galactica series
Sabacc - from the Star Wars universe
Tall Card - from the Firefly television series
Triple Triad - from the Final Fantasy VIII video game

See also

- Playing card

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Trick Taking Games

Trick-taking games are card games with a distinct and common play structure: Each round of play is divided into units called *tricks*, during which each player selects one card from his or her hand. These games comprise one of the most diverse and prolific genre of card games — they are played on every continent, and have existed for centuries. One theory regarding the prolific nature of the genre is that they are popular because of the relatively intense play complexity — including both psychological and mathematical elements — that emerges from a relatively simple structure.

Essential building-block: The trick

All trick-taking games use the concept of a *trick*. During each trick, every player puts one card from his or her hand into play-- there is no option of playing multiple cards, or of abstaining from the trick. Once each player has played a card to the trick, they are turned face down and removed from play: typically the winning player or partnership takes them, but in duplicate play, as at Bridge tournaments, the face-down cards remain in front of each player so the hand remains together for reuse.

For each trick, one player will have the *lead*, the right and obligation to play the first card of the trick. The others play in order according to their physical position, typically clockwise in games originating in English-speaking countries, counter-clockwise in some other countries.

Playing last to a trick is usually the most advantageous position, because the last player can react to the other players' decisions. However, leading can be advantageous as well, since it determines the suit which other players, if able, must play.

In some games, such as Bridge, the lead to the first trick (the opening lead) is made by the player next in rotation after the contractor, so that the contractor plays last to that trick. Other games feature a fixed initial lead: in Hearts as commonly played in North America, the player holding the 2 of Clubs must lead it on the first trick. Subsequently, the lead for each trick is made by the winner of the preceding one.

Domino games analogous to trick-taking card games are the Chinese Tien Gow and the Texan 42 (dominoes).

Variations in trick-taking games

Many variations exist among trick-taking games, and these dimensions of variance, in fact, determine the character of the game.

Objective

Trick-taking games are usually classified, firstly, according to the objective of the players.

- In *positive* trick-taking games, players seek unambiguously to take tricks. There is no penalty for taking as many tricks as possible. Examples of this include Bridge, 500 and Euchre.

- In *evasion* trick-taking games, players seek to avoid tricks. An example of this is Hearts.

- *Exact-prediction* trick-taking games, always involving some sort of *contract* (see below) reward players for predicting (usually after knowing their hands) how many cards they will take. Oh Hell and Spades are exact-prediction games, but also positive in that they are biased in favor of one's taking more tricks *(i.e. it is better to predict taking 5 tricks, and do so, than to accurately predict taking 4 tricks.)*

Some point-trick games contain features of both positive and evasion games. For example, in the Omnibus variant of Hearts, the Jack of Diamonds is actually counted as -10 points (where negative scores are to a player's benefit) and therefore Omnibus Hearts is not strictly an evasion game. Alternatively, in 500, while most rounds are positive, in misère rounds, the aim is to lose all tricks.

Scoring

As far as scoring goes, trick-taking games are usually classified as either:

- *Plain trick* games, where the contents of each trick are irrelevant, and only the number of tricks taken by each player matters.

- *Point-trick* games, wherein players are penalized or rewarded for taking certain cards, each of which has an assigned point-value.

Trick structure

Most trick-taking games feature systems of requirements regarding what cards players are allowed to play. A common feature is the requirement of *following suit* where players must follow with a card of the suit led, if able. Another is the requirement to *ruff*, where a player must play trump if they cannot follow suit.

These requirement systems are ordered lists of instructions where players must follow the "top" instruction they can satisfy. For example:

- In Bridge a player must:
    - Follow suit, if able;
    - Otherwise, play any card.
- In some versions of Hearts, a player must:

    - Follow suit, if able;
    - Otherwise, play the Queen of Spades, if holding it;
    - Otherwise, play any card.
- In Pinochle a player must:
    - Follow suit with a higher card than any already played to the trick, if able;
    - Otherwise, follow suit, if able;
    - Otherwise, play a trump higher than any already played to the trick, if able;
    - Otherwise, play any card.

The last instruction on each list is, by necessity, always "play any card". Each trick must contain one card per player, and hence a player unable to satisfy any other instruction is at liberty to play any card at all.

These requirement systems constitute "honor rules" in that violations cannot be detected when they are committed; players follow them "on their honor". However, other players use these rules to infer the absence of certain cards in the player's (hidden) hand, and will detect the irregularity when such a card is played later. This violation of the game's rules is known as a revoke or *renege*, and is usually considered quite a serious offense, and the breach is severely penalized.

Partnership

In some trick-taking games, such as Hearts, players compete as individuals. In others, such as Bridge and Spades, they operate in two-player partnerships; in Bridge the partner of the contractor or declarer is called dummy and does not participate in the play, dummy's hand being fully exposed after the opening lead, and declarer playing the cards from both hands at their respective turns. There are games with fixed partnerships such as Bridge, and those with temporary partnerships, changing every round, such as Skat. Some games with temporary partnerships are played one-against-two or even one-against-three.

Trump

Many trick-taking games contain a trump suit. Cards in the trump suit outrank all others. If trump is played to a trick led in another suit, the highest card of the trump suit (rather than the highest card in the led suit) wins.

Trump may be *static* or *dynamic*. Static trump is featured in Spades, where the spade suit is always trump, as well as many tarock games where a separate trump suit (in addition to the other four) is featured. When trump is dynamic, as in Contract Bridge, it is usually declared by the winner of the auction, the right to choose trump being an incentive for players to bid; or in some games, such as Oh Hell and the original form of Whist, it is determined randomly by exposing a card (in this case it's as if the trump was static, but it adds some psychological variety to the game and makes it more difficult to cheat while dealing the cards if the trump suit is only chosen in the end of the deal).

Auction

Many trick-taking games also contain an auction, or a bid that represents a player's confidence in her (or her team's) trick-taking ability. These bids result in *contracts* for some or all players, or agreements to take a certain number of tricks or points.

More difficult contracts usually result in more points for tricks taken, as well as, sometimes, the ability to declare trump. However, failing to meet the contract is called being *set* and results in penalties.

- In Bridge, each player bids for his or her partnership. For example, a bid of "3 clubs" indicates willingness to make a contract requiring 9 tricks *(7 tricks is the minimum bid in bridge, so 6 tricks are subtracted in declaring)* with the club suit as trump. Bidding continues, each bid higher than the last, until three players pass in a row. Only one partnership bids; the other partnership is said to be *defending*; they do not have a contract, but seek to set the contractors.

- In Spades, each player bids based upon her confidence in her own trick-taking ability, but the contract is formed by the team. For example, one partner may make a bid of 3 tricks, and the other of 5. The partnership's contract is fulfilled as long as they take, in combination, at least 8 tricks. Both partnerships for contracts.

- In Oh Hell, all players make contracts. This exact-prediction game is often played with the rule that players' bids must not total the number of tricks to be played, so that at least one player is set in each hand.

See also

- List of trick-taking games

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List of Trick-taking Games

The trick-taking genre of card games is one of the most common varieties, found in every part of the world. The following is a list of trick-taking games, most played with the standard deck of playing cards.

The following is a **list of trick-taking games**:

Bashi Fen
Belote
Bourré
Bridge
Bezique
Black Lady
Bluke
Briscola (using Italian playing cards)
Écarté
Euchre
Escoba
500 (Five Hundred)
Forty-Five
Hearts
Jabberwocky
Jass
Napoleon
Ninety-Nine
Oh Hell
Pinochle
Pedro or "Piedro"
Pitch or "Setback"
Preferans
Renfield
Sechsundsechzig
Sheepshead
Skat
Spades
Sueca (game)

Tarabish or "Bish"
Tarocchini
Tarocchi
Whist
Wizard

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Collectible Card Games

- **Collectible card games** (**CCGs**), also called **customizable card games** or **trading card games**, are played using specially designed sets of cards. While trading cards have been around for much longer, CCGs combine the appeal of collecting and strategic game play.

The first widely-known collectible card game was Magic: The Gathering, designed by Richard Garfield, published by Wizards of the Coast in 1993.

Gameplay

Each CCG system has a fundamental set of rules that describes the players' objectives, the categories of cards used in the game, and the basic rules by which the cards interact. Each card will have additional text explaining that specific card's effect on the game. They also generally represent some specific element derived from the game's genre, setting, or source material. The cards are illustrated and named for these source elements, and the card's game function may relate to the subject. For example, Magic is based on the fantasy genre, so many of the cards represent creatures and magical spells from that setting. In the game, a dragon is illustrated as a reptilian beast, has the *flying* ability, and has quite formidable game statistics compared to other creatures.

Almost all CCGs are designed around a single resource system by which the pace of each game is generally controlled. Frequently, the cards which comprise a player's deck are also in and of themselves a resource, with the frequency of cards moving from the deck to the play area or player's hand being tightly controlled. Relative card strength is often balanced by the number or type of basic resources needed in order to play the card, and pacing after that may be determined by the flow of cards moving in and out of play. Resources may be specific cards themselves, or represented by other means (i.e.

tokens in various resource pools, symbols on cards, etc...).

Players select which cards will compose their deck from the available pool of cards - unlike traditional card games such as poker or UNO where the deck's content is limited and pre-determined. This allows a CCG player to strategically customize their deck to take advantage of favorable card interactions, combinations and statistics.

During a game, players traditionally take turns playing cards and performing game-related actions. The order and titles of these steps vary between different game systems, but these are typical:

- Restore - make all in play cards ready for the upcoming turn
- Draw card(s) - necessary in order to circulate cards in players' hands
- Play card(s) - use the cards in hand to interact with the game
- Conflict - the primary method for victory in most games (combat is a very popular theme)
- Discard card(s) - most games have a maximum hand size, or need to refresh for next turn

Internet play

Modern CCGs have also been developed that are played over the Internet. Instead of receiving physical cards, a player establishes a "virtual" collection that is kept only in electronic memory and cards can be purchased or traded within this environment. There are online versions of games that originated as physical CCGs, as well as games that exist solely online. The first online CCG was known as Chron X and was designed and produced by Genetic Anomalies

Distribution

Specific game cards are most often produced in various degrees of scarcity, generally denoted as *common*, *uncommon*, and *rare*. Some games use alternate or additional designations for the relative rarity levels. Special cards may also only be available through promotions, events, or redemption programs.

Most *collectible card games* are distributed as sealed packs containing a subset of the available cards, much like trading cards. Some of the most common distribution methods are:

- Starter set - This is an introductory product which contains enough cards for two player and includes instructional

information for the specific game. In order to speed the learning process, the card content is typically fixed and designed around a theme, so that the new players can start playing right away.
- Tournament or starter deck - This contains enough game cards (usually 40 or more) for one player. It usually contains a random selection of cards, but with some basic elements so that it may be playable from the start.
- Theme deck - Most CCGs are designed with opposing factions, themes, or strategies. A theme deck is composed primarily of cards that will work well together and is typically non-random.
- Booster packs - This method of distribution is most similar to trading cards as the packs contain a random selection of typically 8 to 15 cards.

Patent

Wizards of the Coast holds U.S. Patent 5,662,332 on trading card games. The patent, filed in October 1995 and granted in September 1997, covers:

- Games published in the form of trading cards.
- Games in which a player selects a collection of tradeable elements and uses that set to compete with other players.
- Certain aspects of gameplay originally developed for *Magic: The Gathering*, such as "tapping" a card to indicate it is temporarily depleted.

As a holder of the patent, Wizards of the Coast has requested that all trading card game publishers license the mechanics described in the patent, usually for a royalty fee based on total sales.

In October 2003, Wizards of the Coast filed suit against Nintendo and related companies in U.S. District Court in Seattle shortly after its distribution agreement expired. The suit alleged, along with other claims, that the Pokémon Trading Card Game infringed on the company's patent. In December of that year, the parties settled the case on undisclosed terms, precluding a judicial ruling which might have been the first test of the patent's legal validity. As a result of this suit, the "magic cards" in the Yu-Gi-Oh! Trading Card Game are now called "spell cards".

References

- Wizards of the Coast (Oct. 15, 1997). Wizards of the Coast Inc.

Granted Patent on Trading Card Games. *Press Release*.
- Cook, John (Oct. 11, 2003). It's Wizards vs. Pokemon as ex-partners square off. *Seattle Post-Intelligencer*.
- Sports Collectors Digest (April 7, 2000) at 50. Description of the first known collectible card game, The Base Ball Card Game produced by The Allegheny Card Co. and registered on April 4, 1904 featuring 104 unique baseball cards with individual player attributes printed on the cards enabling each collector to build a team and play the game against another person.

See also

- List of collectible card games

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See ***collectible card game*** *for information on this genre.*
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Playing Cards

A **playing card** is a typically hand-sized rectangular (in India, round) piece of heavy paper or thin plastic used for playing card games. A complete set of cards is a **pack** or **deck**. Playing cards are often used as props in magic tricks, as well as occult practices such as cartomancy, and a number of card games involve (or can be used to support) gambling. As a result, their use sometimes meets with disapproval from some religious groups (such as conservative Christians). They are also a popular collectible (as distinct from the cards made specifically for collectible trading card games). Specialty and novelty decks are commonly produced for collectors, often with political, cultural, or educational themes. One side of each card (the "front" or "face") carries markings that distinguish it from the others and determine its use under the rules of the particular game being played, while the other side (the "back") is identical for all cards, usually a plain color or abstract design. In most games, the cards are assembled into a "deck" (or "pack"), and their order is randomized by a procedure called "shuffling" to provide an element of chance in the game.

History

Early history

The origin of playing cards is obscure, but it is almost certain that they began in China after the invention of paper. Ancient Chinese "money cards" have four "suits": coins (or cash), strings of coins (which may have been misinterpreted as sticks from crude drawings), myriads of strings, and tens of myriads. These were represented by ideograms, with numerals of 2-9 in the first three suits and numerals 1-9 in the "tens of myriads". Wilkinson suggests in The Chinese origin of playing cards that the first cards may have been actual paper currency which were both the tools of gaming and the stakes being played for. The designs on modern Mahjong tiles and dominoes likely evolved from those earliest playing cards. The Chinese word *p'ai* is used to describe both paper cards and gaming tiles.

The time and manner of the introduction of cards into Europe are matters of dispute. The 38th canon of the council of Worcester (1240) is often quoted as evidence of cards having been known in England in the middle of the 13th century; but the games *de rege et regina* there mentioned are now thought to more likely have been chess. If cards were generally known in Europe as early as 1278, it is very remarkable that Petrarch, in his dialogue that treats gaming, never once mentions them. Boccaccio, Chaucer and other writers of that time specifically refer to various games, but there is not a single passage in their works that can be fairly construed to refer to cards. Passages have been quoted from various works, of or relative to this period, but modern research leads to the supposition that the word rendered cards has often been mistranslated or interpolated.

It is likely that the ancestors of modern cards arrived in Europe from the Mamelukes of Egypt in the late 1300s, by which time they had already assumed a form very close to those in use today. In particular, the Mameluke deck contained 52 cards comprising four "suits": polo sticks, coins, swords, and cups. Each suit contained ten "spot" cards (cards identified by the number of suit symbols or "pips" they show) and three "court" cards named malik (King), n'ib malik

(Viceroy or Deputy King), and thn+ n'ib (Second or Under-Deputy). The Mameluke court cards showed abstract designs not depicting persons (at least not in any surviving specimens) though they did bear the names of military officers. A complete pack of Mameluke playing cards was discovered by L.A. Mayer in the Topkapi Sarayi Museum, Istanbul, in 1939; this particular complete pack was not made before 1400, but the complete deck allowed matching to a private fragment dated to the twelfth or thirteenth century. There is some evidence to suggest that this deck may have evolved from an earlier 48-card deck that had only two court cards per suit, and some further evidence to suggest that earlier Chinese cards brought to Europe may have travelled to Persia, which then influenced the Mameluke and other Egyptian cards of the time before their reappearance in Europe.

It is not known whether these cards influenced the design of the Indian cards used for the game of Ganjifa, or whether the Indian cards may have influenced these. Regardless, the Indian cards have many distinctive features: they are round, generally hand painted with intricate designs, and comprise more than four suits (often as many as twelve).

Spread across Europe and early design changes

In the late 1300s, the use of playing cards spread rapidly across Europe. The first widely accepted references to cards are in 1371 in Spain, in 1377 in Switzerland, and, in 1380, they are referenced in many locations including Florence, Paris, and Barcelona. A Paris ordinance dated 1369 does not mention cards; its 1377 update includes cards. In the account-books of Johanna, duchess of Brabant, and her husband, Wenceslaus of Luxemburg, there is an entry dated May 14, 1379 as follows: "Given to Monsieur and Madame four peters, two forms, value eight and a half moutons, wherewith to buy a pack of cards". An early mention of a distinct series of playing cards is the entry of Charles or Charbot Poupart, treasurer of the household of Charles VI of France, in his book of accounts for 1392 or 1393, which records payment for the painting of three sets or packs of cards, which were evidently already well known.

It is clear that the earliest cards were executed by hand, like those designed for Charles VI. However, this was quite expensive, so other means were needed to mass-produce them. It is possible that the art of wood engraving, which led to the art of printing, developed because of the demand for implements of play. If the assumption is true that the cards of that period were printed from wood blocks, the early card makers or cardpainters of Ulm, Nuremberg, and Augsburg, from about 1418 to 1450, were most likely also wood engravers.

Many early woodcuts were colored using a stencil, so it would seem that the art of depicting and coloring figures by means of stencil plates was well known when wood engraving was first introduced. No playing cards engraved on wood exist whose creation can be confirmed as early 1423 (the earliest-dated wood engraving generally accepted). However, in this period professional card makers were established in Germany, so it is probable that wood engraving was employed to produce cuts for sacred subjects before it was applied to cards, and that there were hand-painted and stencilled cards before there were wood engravings of saints. The German *Brief maler* or card-painter probably progressed into the wood engraver; but there is no proof that the earliest wood engravers were the card-makers.

The Europeans experimented with the structure of playing cards, particularly in the 1400s. Europeans changed the court cards to represent European royalty and attendants, originally "king", "chevalier", and "knave" (or "servant"). Queens were introduced in a number of different ways. In an early surviving German pack (dated in the 1440s), Queens replace Kings in two of the suits as the highest card. Throughout the 1400s, 56-card decks containing a King, Queen, Knight, and Valet were common. Suits also varied; many makers saw no need to have a standard set of names for the suits, so early decks often had different suit names (though typically 4 suits). The cards manufactured by German printers used the suits of hearts, bells, leaves, and acorns still present in Eastern and Southeastern German decks today used for Skat and other games. Later Italian and Spanish cards of the 15th century used swords, batons, cups, and coins. It is likely that the Tarot deck was invented in Italy at that time, though it is often mistakenly believed to have been imported into Europe by Gypsies. While originally (and still in some places, notably Europe) used for the game of Tarocchi, the Tarot deck today is more often used for cartomancy and other occult practices. This probably came about in the 1780s, when occult philosophers mistakenly associated the symbols on Tarot cards with Egyptian hieroglyphs.

The four suits (hearts, diamonds, spades, clubs) now used in most of the world originated in France, approximately in 1480. These suits have generally prevailed because decks using them could be made more cheaply; the former suits were all drawings which had to be reproduced by woodcuts, but the French suits could be made by stencil. The *trèfle*, so named for its resemblance to the trefoil leaf, was probably copied from the acorn; the *pique* similarly from the leaf of the German suits, while its name derived from the sword of the Italian suits. It is not derived from its resemblance to a pike head, as commonly supposed. In England the French suits were used, and are named hearts, clubs (corresponding to *trèfle*, the French symbol being joined to the Italian name, *bastoni*), spades (corresponding to the French *pique*, but having the Italian name, spade=sword) and diamonds. This confusion of names and symbols is accounted for by Chatto thus:

> "If cards were actually known in Italy and Spain in the latter part of the 14th century, it is not unlikely that the game was introduced into this country by some of the English soldiers who had served under Hawkwood and other free captains in the wars of Italy and Spain. However this may be, it seems certain that the earliest cards commonly used in this country were of the same kind, with respect to the marks of the suits, as those used in Italy and Spain."

Court cards have likewise undergone some changes in design and name. Early court cards were elaborate full-length figures; the French in particular often gave them the names of particular heroes and heroines from history and fable. A prolific manufacturing center in the 1500s was Rouen, which originated many of the basic design elements of court cards still present in modern decks. It is likely that the Rouennais cards were popular imports in England, establishing their design as standard there, though other designs became more popular in Europe (particularly in France, where the Parisian design became standard). Rouen courts are traditionally named as follows: the kings of spades, hearts, diamonds, and clubs are David, Alexander, Caesar, and Charles (Charlemagne), respectively. The knaves (or "jacks"; French "valet") are Hector (prince of Troy), La Hire (comrade-in-arms to Joan of Arc), Ogier (a knight of Charlemagne), and Judas Maccabeus (who led the Jewish rebellion against the Syrians). The queens are Pallas (warrior goddess; equivalent to the Greek Athena or Roman Minerva), Rachel (biblical mother of Joseph), Argine (the origin of which is obscure; it is an anagram of regina, which is Latin for queen), and Judith (from Book of Judith). Parisian tradition uses the same names, but assigns them to different suits: the kings of spades, hearts, diamonds, and clubs are David, Charles, Caesar, and Alexander; the queens are Pallas, Judith, Rachel, and Argine; the knaves are Ogier, La Hire, Hector, and Judas Maccabee. Oddly, the Parisian names have become more common in modern use, even with cards of Rouennais design.

Later design changes

In early games the kings were *always* the highest card in their suit. However, as early as the late 1400s special significance began to be placed on the nominally lowest card, now called the Ace, so that it sometimes became the highest card and the Two, or Deuce, the lowest. This concept may have been hastened in the late 1700s by the French Revolution, where games began being played "ace high" as a symbol of lower classes rising in power above the royalty. The term "Ace" itself comes from a dicing term in Anglo-Norman language, which is itself derived from the Latin *as* (the smallest unit of coinage). Another dicing term, *trey* (3), sometimes shows up in playing card games.

Corner and edge indices appeared in the mid-1800s, which enabled people to hold their cards close together in a fan with one hand (instead of the two hands previously used). Before this time, the lowest court card in an English deck was officially termed the *Knave*, but its abbreviation ("Kn") was too similar to the King ("K"). However, from the 1600s on the Knave had often been termed the *Jack*, a term borrowed from the game All Fours where the Knave of trumps is termed the Jack. All Fours was considered a low-class game, so the use of the term Jack at one time was considered vulgar. The use of indices changed the formal name of the lowest court card to Jack.

This was followed by the innovation of reversible court cards. Reversible court cards meant that players would not be tempted to make upside-down court cards right side up. Before this, other players could often get a hint of what other players' hands contained by watching them reverse their cards. This innovation required abandoning some of the design elements of the earlier full-length courts.

The joker is an American innovation. Created for the Alsatian game of Euchre, it spread to Europe from America along with the spread of Poker. Although the joker card often bears the image of a fool, which is one of the images of the Tarot deck, it is not believed that there is any relation. In contemporary decks, one of the two jokers is often more colorful or more intricately detailed than the other, though this feature is not used in most card games. The two jokers are often differentiated as "Big" and "Little," or more commonly, "Red" and "Black." In many card games the jokers are not used. Unlike face cards, the design of jokers varies widely. Many manufacturers use them to carry trademark designs.

In the twentieth century, a means for coating cards with plastic was invented, and has taken over the market, producing a durable product. An example of what the old cardboard product was like is documented in Buster Keaton's silent comedy The Navigator, in which the forlorn comic tries to shuffle and play cards during a rainstorm.

Alleged symbolism

Popular legend holds that the composition of a deck of cards has religious, metaphysical or astronomical significance: typical numerological elements of the explanation are that the four suits represent the four seasons, the 13 cards per suit are the 13 phases of the lunar cycle, black and red are for day and night, and finally, if the value of each card is added up - and 1 is added, which is generally explained away as being for a single joker - the result is 365, the number of days in a year. The context for these stories is sometimes given to suggest that the interpretation is a joke, generally being the purported explanation given by someone caught with a deck of cards in order to suggest that their intended purpose was not gambling (Urban Legends Reference Pages article).

Playing cards today

Anglo-American

The primary deck of fifty-two playing cards in use today, called **Anglo-American playing cards**, includes thirteen ranks of each of the four English suits, spades (`), hearts (e), diamonds (f) and clubs (c), with reversible Rouennais court cards. Each suit includes an ace, depicting a single symbol of its suit; a king, queen, and jack, each depicted with a symbol of its suit; and ranks two through ten, with each card depicting that many symbols (*pips*) of its suit. Two (sometimes one or four) Jokers, often distinguishable with one being more colorful than the other, are included in commercial decks but many games require one or both to be removed before play. Modern playing cards carry index labels on opposite corners (rarely, all four corners) to facilitate identifying the cards when they overlap.

The fanciful design and manufacturer's logo commonly displayed on the Ace of Spades began under the reign of James I of England, who passed a law requiring an insignia on that card as proof of payment of a tax on local manufacture of cards. Until August 4, 1960, decks of playing cards printed and sold in the United Kingdom were liable for taxable duty and the Ace of Spades carried an indication of the name of the printer and the fact that taxation had been paid on the cards. The packs were also sealed with a government duty wrapper.

Though specific design elements of the court cards are rarely used in game play, a few are notable. The jack of spades and jack of hearts are drawn in profile, while the rest of the courts are shown in full face (the exception being the King of Diamonds), leading to the former being called the "one-eyed" jacks. When deciding which cards are to be made wild in some games, the phrase, "acey, deucey, one-eyed jack," is sometimes used, which means that aces, twos, and the one-eyed jacks are all wild. Another such variation, "deuces, aces, one-eyed faces," is used to indicate aces, twos, the jack of hearts, the jack of spades, and the king of hearts are wild. The king of hearts is shown with a sword behind his head, leading to the nickname "suicide king". The King of Diamonds is armed with an ax while the other three kings are armed with swords. The king of Diamonds is sometimes referred to as "the man with the ax" because of this. The Ace of Spades, unique in its large, ornate spade, is sometimes said to be the death card, and in some games is used as a trump card. The Queen of Spades appears to hold a scepter and is sometimes known as "the bedpost queen."

There are theories about who the court cards represent. For example, the Queen of Hearts is believed by some to be a representation of Elizabeth of York - the Queen consort of King Henry VII of England. However the Kings, Queens and Jacks of standard Anglo/American cards do not represent anyone. They stem from designs produced in Rouen before 1516 and by 1540-67 these Rouen designs show well-executed pictures in the court cards with the typical court costumes of the time. In these early cards the Jack of Spades, Jack of Hearts and the King of Diamonds are shown from the rear, with their heads turned back over the shoulder so that they are seen in profile. However the Rouen cards were so badly copied in England that the current designs are gross distortions of the originals.

Other oddities such as the lack of a moustache on the King of Hearts also have little significance. The King Of Hearts did originally have a moustache but it was lost by poor copying of the original design. Similarly the objects carried by the court cards have no significance. They merely differentiate one court card from another and have also become distorted over time.

The most common sizes for playing cards are poker size (*2½in* × *3½in*, approx. *63mm* × *88mm*) and bridge size (*2¼in* × *3½in*, approx. *56mm* × *87mm*), the latter being more suitable for games such as bridge in which a large number of cards must be held concealed in a player's hand. Interestingly, in most casino poker games, the bridge sized card is used. Other sizes are also available, such as a smaller size (usually 1¾in × 2]in, approx. 44mm × 66mm) for solitaire and larger ones for card tricks.

Some decks include additional design elements. Casino blackjack decks may include markings intended for a machine to check the ranks of cards, or shifts in rank location to allow a manual check via inlaid mirror. Many casino decks and solitaire decks have four indices instead of the usual two. Many decks have large indices, largely for use in stud poker games, where being able to read cards from a distance is a benefit and hand sizes are small. Some decks use four colors for the suits in order to make it easier to tell them apart: the most common set of colors is black (spades `), red (hearts e), blue (diamonds f) and green (clubs c).

When giving the full written name of a specific card, the rank is given first followed by the suit, e.g., "Ace of Spades". Shorthand notation may list the rank first "A`" (as is typical when discussing poker) or list the suit first (as is typical in listing several cards in bridge) "`AKQ". Tens may be either abbreviated to T or written as 10.

German and Austrian

German and Austrian suits may have different appearances. Many southern Germans and Austrians prefer decks with hearts, bells, leaves, and acorns (for hearts, diamonds, spades, and clubs), as mentioned above. In the game Skat, Eastern Germany players used the German deck, while players in western Germany mainly used the French deck. After the reunification a compromise deck was created, with French symbols, but German colors. Therefore, many "French" decks in Germany now have yellow or orange diamonds and green spades.

Hungarian

The Hungarian Card was born in the times before the 1848-49 Hungarian Freedom Fights, when revolutionary movements were awakening all over in Europe. It is a 32 card deck, its four colors include hearts, bells, leaves and acorns. The numbering includes VII, VIII, IX, X, Under, Over, King and Ace. The Aces show the for seasons: spring, summer, autumn and winter. The characters of the Under and Over cards were taken from the drama, William Tell, written by Schiller in 1804, that was shown at Kolozsvar in 1827. It was long believed that the card was invented in Vienna at the Card Painting Workshop of Piatnik Ferdinand, however in 1974 the very first deck was found in an English Private Collection, and it has shown the name of the inventor and creator of deck as Schneider József, a Master Card Painter at Pest, and the date of its creation as 1837. Interesting that he have chosen the characters of a Swiss drama as his characters for his over and under cards, however if he would have chosen Hungarian heroes or freedom fighters, his deck of cards would have never made it into distribution, due to the heavy censorship of the goverment at the time.

Games that are played with this deck including Ulti, Snapszer (or 66), Zsirozas, Preferansz and Lorum.

Italian

Italian playing cards most commonly consist of a deck of 40 cards. Hundreds of different designs are in use in different parts of the country (about one per province). The suits are coins (sometimes suns or sunbursts), swords, cups and clubs (sometimes batons), and each suit contains an ace (or one), numbers two through seven, and three face cards. The face cards are:

- King - a man standing, wearing a crown
- Knight - a man sitting on a horse
- Jack - a younger man standing, without a crown

Unlike Anglo-American cards, Italian cards do not have any numbers (or letters) identifying their value. The cards' value is determined by identifying the face card or counting the number of suit characters.

Spanish

The traditional Spanish deck (referred to as baraja española in Spanish) is a direct descendant of the Tarot deck. However, like most other decks derived from it, the Spanish deck kept only the minor arcana (with the exception of the 10s and the queen of each suit, which were dropped), while all of the major arcana from the Tarot deck were discarded. Being a Latin-suited deck (like the Italian deck), it is organized into four *palos* (suits) that closely match those of the Tarot deck: *oros* ("golds" or coins, *cf.* the Tarot suit of pentacles), *copas* (cups), *espadas* (swords) and *bastos* (batons or clubs, *cf.* the Tarot suit of wands). Apart from its characteristic icon, each suit can also be identified by a pattern of interruptions in the horizontal sections of the quadrangular line that frames each card (this pattern is known as *la pinta*): none for *oros*, one for *copas*, two for *espadas* and three for *bastos*.

The cards (*naipes* or *cartas* in Spanish) are all numbered, but unlike in the standard Anglo-French deck, the card numbered 10 is the first of the court cards (instead of a card depicting ten coins/cups/swords/batons); so each suit has only twelve cards. The three court or face cards in each suit are as follows: *la sota* ("the knave", jack or page, numbered 10 and equivalent to the Anglo-French card J), *el caballo* ("the horse", horseman, knight or cavalier, numbered 11 and used instead of the Anglo-French card Q; note the original Tarot deck has both a cavalier and a queen of each suit, while the Anglo-French deck dropped the former, and the Spanish deck dropped the latter), and finally *el rey* ("the king", numbered 12 and equivalent to the Anglo-French card K). Many Spanish games involve forty-card decks, with the 8s and 9s removed.

The Spanish deck is used not only in Spain, but also in other countries where Spain maintained an influence (*e.g.*, the Philippines and Puerto Rico) 1. Among the games played with this deck are: el mus (a very popular and highly regarded vying game of Basque origin), la brisca, el tute (with many variations), el guiñote, la escoba (a trick-taking game), el julepe, el cinquillo, las siete y media, la mona, el truc (or truco), and el cuajo (a matching game from the Philippines).

Japanese

The standard 54-card deck is also commonly known as a poker deck or—in Japan—a Trump deck, to differentiate it from "dedicated" card games such as UNO ,or other dynamic card decks like Hanafuda and Kabufuda.

Reference

- Parlett, David. *The Oxford Guide to Card Games*. 1990. ISBN 0-19-214165-1.

Card magicians and gambling authorities

aladin
Allan Ackerman
Michael Ammar
David Blaine
Mike Caro
Daryl
Alex Elmsley
S. W. Erdnase
Lennart Green
Brother John Hamman
Guy Hollingworth
Ricky Jay
Larry Jennings
René Lavand

Ed Marlo
Jeff McBride
Darwin Ortiz
John Scarne
Juan Tamariz
Dai Vernon
Jeff Wessmiller

See also

- Card game

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Educational Games

Educational games are games, including video games of this genre, designed to teach people, typically children, about a certain subject or help them learn a skill as they play. Some people call these types of games edutainment because they combine education and entertainment. (At the moment this article primarily deals with video games.)

There are many educational games. Games that parents and teachers play with children usually have some kind of educational value. Here is short list of examples:

eduProfix
Zoombinis
Pelmanism

Most of these types of games target young user from the ages of about three years to mid-teens; past the mid-teens, subjects become so complex (e.g. calculus) that teaching via a game is impractical. Numerous subgenres exist, each for a different field (math games, typing games and so on).

Notable games in the genre include the Carmen Sandiego series, Mavis Beacon Teaches Typing, and the Oregon Trail series.

Programming games like Robocode and Core War may also be put in the educational category.

A somewhat less serious approach to the genre is typified by the typing tutor *The Typing of the Dead*.

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Letter Games

A **letter game** involves the exchange of written letters, or e-mails, between two or more participants. The first player writes a letter in the voice of a newly created character; in this first letter, the writer should establish her own identity and that of her correspondent, should set the scene, and should explain why she and her correspondent must communicate in written fashion. In subsequent letters, plot and character can be developed, but the writers should not talk about plot outside of the letters and the characters should never meet. Letter games can be a writing exercise or a role playing game.

Novels written using or inspired by this type of letter game include *Sorcery and Cecilia or The Enchanted Chocolate Pot*, by Patricia Wrede and Caroline Stevermer; Freedom and Necessity, by Steven Brust and Emma Bull; and the children's books P.S. Longer Letter Later and Snail Mail No More by Paula Danziger.

See also

- Play-by-mail game
- word game

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Mental-skill Games

A **game of mental skill** (sometimes called a **mind sport**) is a game where training of muscles and skill in controlling them offers insignificant advantage, and mental abilities are paramount.

The Mind Sports Organisation promotes the concept that developing excellence in such activities deserves respect similar to that traditionally accorded to sports, in line with the dictum of Plato:

> The contestant in mental games must train for battle with just as much care as the athlete.

List of mental games

Abalone

Acquire
Arimaa
Backgammon
boku
Borderline
Bridge
Chess
Continuo
Creativity
Cribbage
Crossword puzzles
Decamentathlon
Diplomacy
Dominoes
Draughts (also called checkers)
Entropy
Gipf
Go
Hex
Hexdame
Intelligence quiz
Lines of Action
Lost Cities
Mastermind
Make-a-Match
Memory skills
Mental calculation
Mind mapping
Number Quest
Othello/Reversi
Pentomino
Poker
Quiz
Quizbowl
Scrabble
Settlers of Catan
Shogi
Skat
Speed reading
TRAX
TwixT
Xiangqi
Zatre
Zertz

See also Board game, Games of skill

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Play-by-mail Games

Play by mail games are games, of any type, played through postal mail or e-mail. One example, chess, has been played by mail for centuries (when played in this way, it is known as correspondence chess). Another example, Diplomacy, has been played by mail since the 1960s, starting with a printed newsletter (a fanzine) written by John Boardman. More complex wargames, moderated by computer programs, were pioneered by Rick Loomis and his company, Flying Buffalo in the 1970s. The first such games offered via email through major online services such as AOL were created at Stormfront Studios, starting in 1989. (Internet and BITNET email games predate 1989.)

Play by mail games are often referred to as PBM games, and play by email is sometimes abbreviated PBeM -- as opposed to face to face (FTF) games which are played in person. Another variation on the name is Play-by-Internet (PBI) or **play-by-web** (PBW). In all of these examples, player moves can be either executed by a human moderator, a computer program, or a combination.

In the 1980s, play-by-mail games reached their peak of popularity with the advent of Gaming Universal, the first professional magazine devoted to play-by-mail games. A similar magazine, Flagship, focused on British PBM games. Bob McLain, the publisher and editor of Gaming Universal, further popularized the hobby by writing articles that appeared in many of the leading mainstream gaming magazines of the time.

In the late 1990s, computer and Internet games marginalized play-by-mail conducted by actual postal mail, but the postal hobby still exists with an estimated 2000-3000 adherents worldwide.

Postal gaming

Postal gaming developed as a way for geographically separated gamers to compete with each other. It was especially useful for those living in isolated areas and those whose tastes in games was uncommon.

In the case of a two player game such as chess, players would simply send their moves to each other alternately.

In the case of a multi-player game such as Diplomacy, a central game master would run the game, receiving the moves and publishing adjudications. Such adjudications were often published in postal game zines, some of which contained far more than just games.

Internet play-by-mail

With the rise of the Internet, postal gaming and postal games zines have largely been replaced by email and websites. Play by mail games differ from popular online multiplayer games in that, for most computerized multiplayer games, the players have to be online at the same time. With a play by mail game, the players can play whenever they choose. (This is sometimes called a **turn-based game**.) Some computer games can be played in a play by mail mode: you make your "move", mail a file to your opponent, who makes his "move", and mails something back.

The first original play-by-email games offered by major online services were:

Quantum Space, designed and programmed by Don Daglow, on the QuantumLink, PC-Link and AppleLink services (later unified and renamed AOL), (1989-1991). AOL Founder Steve Case personally supported the project.

Rebel Space, designed by Daglow, Mark Buchignani, David Bunnett and Hudson Piehl, which ran on Prodigy from 1992 to 1994.

Several non-commercial email games played on the Internet and BITNET predate these.

A popular and well known play by eMail game is Atlantis PbeM. Thomas Harlan's alternate history PBEM game, Lords of the Earth has been running continuously for 20 years.

E-Mail Games is a site that offers free wargaming by e-mail.

Play By Email Emporium is a site that offers news, support, opponent locator services, tutorials, and files supporting pbem play utilizing utilities such as Aide De Camp and Cyberboard.

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Puzzle Games

A **puzzle** is a problem or enigma presented as entertainment; that is written down, acted out, etc. Many puzzles stem from serious mathematical or logistical problems, whereas others are devised for the sole purpose of being brain teasers. The history of puzzles goes back many thousand years, a tangram being one of the earliest and still one of the most popular puzzles. In certain temples of Japan monks used to write mathematical puzzles on temple walls: see sangaku.

Well known puzzles

Anagrams
Crossword
Eight queens puzzle
n-puzzle (a.k.a. Fifteen puzzle)
Jigsaw puzzle
Knight's Tour
Logic puzzle
Paint by numbers (a.k.a. Tsunami or Pixel Puzzle)
Peg solitaire
Rubik's Cube
Sudoku
Sokoban
Soma cube
Tangram
Tower of Hanoi
Whodunit

See also

- Letter game
- Mathematical game
- Game of skill
- Word play

References

- Creative Puzzles of the World, 1980, Plenary Publications International
- Denkspiele Der Welt, München 1977,1981, Heinrich Hugendubel Verlag

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Guessing Games

A **guessing game** is a game in which the object is to guess some kind of information, such as a word, a phrase, a title, or the location of an object.

Many of the games are played co-operatively. Some player(s) know the answer, but cannot tell the other(s), instead they must help them to guess it.

Examples are:

Battleship
Charades
Hangman
I spy
Mastermind
Name that tune
Pictionary
Quizbowl
Seekipedia
Twenty questions
Who's closest
Guess Who?

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Pencil and Paper Games

Paper and pencil games are games that can be played solely with pencil and paper. Some paper and pencil games (e.g. Gomoku) are abstract strategy games, which are equally well suited to playing as a board game - in this case the defining characteristic will be that once played a piece will not be moved on the board or removed from the board. Others are uniquely suitable for paper and pencil play (e.g. Eat Poop You Cat).

List of Paper and Pencil games

List of Paper & Pencil games usually played with a board

The following games are usually played with a board, but may be played with only a paper and pencil:

- Battleship was played as a pencil and paper game, long before Hasbro came out with a board game version.
- Connect Four
- Gomoku
- Hex

- Mastermind

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Word Games

A **word game** or **word puzzle** can be of several different types:

Letter arrangement games, where the goal is to form words out of given letters:

Anagrams -- both a simple game of rearranging letters and a linguistic recreation of making anagrams that seem to illuminate something about the original word, such as dog for god.
Boggle
Option
Pick Two
Scrabble
Hotspots Word Game
Swedish puzzles
Alpha Blitz
Upwords
Ghost

Paper and pencil games/puzzles:

Acrostic puzzles
Crossword puzzles
Cryptograms
Hangman
Jotto (or Giotto)
Word search

Structured games, focusing on the semantics of words:

Categories
Charades
Fictionary
One, Two, Three
LINQ
Tennis-elbow-foot game

Linguistic recreations based around words and letters:

Anagram as discussed above
Constrained writing
Ditloids
Gry
Palindromes
Pangrams
Letter banks

Lipograms
The Man Who Melted Jack Dann
Oxenfez
Shiritori
Word golf

Others include:

rebuses - picture puzzles representing a word
verbal arithmetic

See word play for literary works in which the nature of the words used themselves become part of the subject of the work.

See also

- list of computer puzzle games
- puzzles

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Online Skill-based Games

Online skill-based games are a growing genre of Internet games. The top publishers of these games include: PopCap Software, iWin.com, WorldWinner.com, and SkillJam.com. They allow users to compete for money in games of skill, rather than games of chance (that is, gambling).

Most skill-based games, or skillgames, fall into four categories:

- Arcade games involve quick fingers and quick thinking. These games are basically sped-up puzzle games. Arcade skillgames include Collapse and Mini-Golf.
- Puzzle games rely on logic abilities and require the user to solve certain types of puzzles. While not as fast-paced as Arcade games, these games often come with a time limit. Popular puzzle games include Bejeweled and HexTwist.
- Word games are basically puzzle games using word problems, like rearranging letters to make words. Popular Word games include Bookworm and Alphabet Soup.
- Trivia games test the users knowledge of trivia in specific categories or in general.

Skillgame sites became very popular in 2005. Following poker sites, online casinos learned that users want to play against each other instead of the house. Like poker sites, skillgame sites take a rake from head-to-head and tournament games. Skillgame sites include SkillJam, WorldWinner and IGN, among others.

Skillgames are also available for download and fun playing from publishers like RealArcade and WildTangent.

Around 2000, Disney invested millions in a new online skill-based game company called Skillgames.com (formerly PureSkill.com). Manhattan-based Skillgames, with endorsements by Disney-owned properties such as ESPN and ABC, was to develop skill-based games such as "Hole-In-One Golf," "Soap Opera Trivia" and others implemented as Java applets on their site. Players could win prizes up to a million dollars their first time playing. Skillgames, the brainchild of Walker Digital, also the parent company of Priceline.com, was unable to overcome some technological hurdles, however, and went out of business in November 2001.

Some websites have been accused of terminating user's accounts and withholding all money when they attempt to withdraw winnings and accusing players of cheating without any actual evidence. This said, it is possible to create computer scripts or non-human players "bots" which can attain the maximum possible score in certain games. The industry is notoriously tight-lipped about this.

Home | Up | Online Multiplayer Games

Online Multiplayer Games

An **online multiplayer game** (**OMG**) is a video game that can be played over the Internet against other players. These types of games can only be played over the Internet, and must involve multiple users. They can be played on a single gaming platform or be capable of being played on a variety of gaming platforms and therefore could be considered a platform unto itself.

Online multiplayer games is an encapsulation of many other popular types of games. It is a master category for the likes of:

MMORPG - Massively-Multiplayer Online RPG
MMORTS - Massively-Multiplayer Real-time strategy
MMOFPS - Massively-Multiplayer First Person Shooter

Online multiplayer games do not have to be able to support a wide audience, but must accommodate at least two players, which is why the "Massively-Multiplayer" tag is not present in the title.

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Games of Physical Skill

Games of physical skill or **dexterity** test the body more than the brain, although strategic thinking may be required. Games of sole body strength are not included in this category; they more refer to games of physical activity. Games of skill depend more on knowledge and mind and here, like always, borders are not straight.

Examples of games of physical skill

Bop It
Coinarama
Jenga
juggling
Kerplunk
Kubb
Operation
Pick-up sticks
Twister
Varpa
Villa Paletti
Wire loop game
Shovepenny

See also

- games
- puzzles

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Games of Chance

A **game of chance** is a game whose outcome is strongly influenced by some randomizing device, and upon which contestants frequently wager money. Common devices used include dice, spinning tops, playing cards, roulette wheels or numbered balls drawn from a container.

Gambling is known in nearly all human societies, even though many have passed laws restricting it. Early people used the knucklebones of sheep as dice. Some people develop a psychological addiction to gambling, and will risk even food and shelter to continue.

Some games of chance may also involve a certain degree of skill. This is especially true where the player or players have decisions to make based upon previous or incomplete knowledge, such as poker and blackjack. The distinction between 'chance' and 'skill' is relevant as in some countries chance games are illegal or at least regulated, where skill games are not.

- Die games
- Card games
- Scrabble
- Casino games
- Lottery, Bingo, Keno
- slot machines, spun wheels, spinning tops
- Piñata

See also

- Game classification

Home | Up | Gambling | Dice Games | Card Games | Scrabble | Casino Games | Lottery | Slot Machines | Piñata

Gambling

Gambling has had many different meanings depending on the cultural and historical context in which it is used. Currently, in western society, it generally has an economic definition and meaning and typically refers to "wagering money or something of material value on something with an uncertain outcome in hope of winning additional money or material goods". Furthermore:

- the outcome of the wager is typically evident within a short period of time
- the primary intent of the bet is to win additional money or material goods

This definition of gambling usually excludes:

- emotional or physical risk-taking where what is being risked is not money or material goods (e.g., skydiving, running for office, asking someone for a date, etc.)

- buying insurance, as the primary intent of the purchase is to protect against loss, rather than to collect or win
- all forms of long-term 'investment' (stock market, real estate) with positive expected returns and economic utility
- starting a new business, as time and effort are also being wagered and the outcome is not determined in a short period of time
- situations where the possibility of winning additional money or material goods is a secondary or incidental reason for the wager/purchase (e.g., buying a raffle ticket to support a worthy cause)

Gambling varies on four dimensions:

- 1. What is being wagered (money or material goods).
- 2. How much is being wagered.
- 3. The predictability of the event. For some things such as lotteries, slot machines and bingo, the results are random and unpredictable. No skill or system will give you any advantage. For other things such as sports betting and horse racing there is some predictability to the outcome. In this situation greater knowledge and skill gives a person an advantage over other bettors.
- 4. The 'expected value', the positive or negative mathematical expectation.

Legal aspects

Because religious authorities generally frown on gambling to some extent, and because of various perceived social costs, most legal jurisdictions censure gambling to some extent. Islamic nations officially prohibit gambling; most other countries regulate it. In particular, in the majority of circumstances - and perhaps all cases - the law does not recognise wagers as contracts, and views any consequent losses as debts of honour, unenforceable by legal process. Thus organized crime often takes over the enforcement of large gambling debts, sometimes using violent methods.

Because contracts of insurance have many features in common with wagers, legislation generally makes a distinction, typically defining any agreement in which either one of the parties has an interest in the outcome bet upon, beyond the specific financial terms, as a contract of insurance. Thus a bet on whether one's house will burn down becomes a contract of insurance, as one has an independent interest in the security of one's home.

Furthermore, many jurisdictions, local as well as national, either ban or heavily control (*license*) gambling. Such regulation generally leads to gambling tourism and illegal gambling - the latter often under the auspices of organized crime. Such involvement frequently brings the activity under even more severe moral censure and leads to calls for greater regulation. Conversely, the close involvement of governments (through regulation and gambling taxation) has led to a close connection between many governments and gambling organisations, where legal gambling provides much government revenue.

There is generally legislation requesting that the odds in gambling machines are fair (i.e. statistically random), to prevent manufacturers from making some high-payoff results impossible (since these have very low probability, this can quite easily pass unnoticed).

Psychological aspects

Though many participate in gambling as a form of recreation or even as a means to gain an income, gambling, like any behavior which involves variation in brain chemistry, can become a psychologically addictive and harmful behavior in some people. Reinforcement phenomena may also make gamblers persist in gambling even after repeated losses. Because of the negative connotations of the word "gambling", casinos and race tracks often use the euphemism "gaming" to describe the recreational gambling activities they offer.

The Russian writer Dostoevsky portrays in his short story The Gambler the psychological implications of gambling and how gambling can affect gamblers. He also associates gambling and the idea of "getting rich quick", suggesting that Russians may have a particular affinity for gambling. Dostoevsky shows the effect of betting money for the chance of gaining more in 19th-century Europe. The association between Russians and gambling has fed legends of the origins of Russian roulette.

Help for addictive gamblers

Many organizations exist to help individuals with a gambling addiction. They include Gamblers Anonymous and Gambler's Help(Australia).

Types of gambling

Casino games

"Beatable" casino games

With proper strategy, a smart player can create a positive mathematical expectation.

- Poker (Also recognised as a game of skill)
- Blackjack -- with card counting
- Video poker -- with proper pay table and/or progressive jackpot
- Pai Gow Poker and Tiles -- player-dealt
- Sports betting
- Horse racing (parimutuel)
- Slot machines -- only linked, multi-player jackpots whose prizes have reached a certain point

"Unbeatable" casino games

These have a negative expectation, players as a group will lose in the long run (unless they cheat).

Baccarat
Craps
Roulette (unless physical prediction is used)
Keno
Casino war
Faro (All but extinct)
Pachinko
Sic Bo
Let It Ride
3-card Poker
4-card poker
Red Dog
Pyramid Poker
Caribbean Stud Poker
Spanish 21 -- without counting

Non-casino gambling games

Lottery
Mahjong
Fan-Tan
Dice-based
Backgammon

  - Liar's dice
  - Passe-dix
  - Hazard
  - Threes
- Card games
  - Liar's poker
  - Bridge
  - Basset
  - Lansquenet
  - Piquet
  - Put
- Coin-tossing
  - Head and Tail
  - Two-up (Australian casinos offer versions of two-up)
- Confidence tricks
  - Three card monte
  - The shell game
- Carnival Games
  - The Razzle
  - Hanky Pank
  - Penny Falls
  - Six-Cat
  - The Swinger
  - The Push-up Bottle
  - The Nail Joint
- Con Games (in bars)
  - Put and Take
  - The Smack
  - The Drunken Mitt

Fixed-odds gambling

Fixed-odds gambling and Parimutuel betting frequently occur at or on the following kinds of events:

- Horse racing (see below)
- Greyhound racing
- Jai alai
- Football matches (particularly on Association and American football)
- Golf
- Tennis
- Cricket
- Baseball
- Basketball
- Ice hockey

Rugby (League and Union)
Snooker
Motor Racing
Boxing
Darts

In addition many bookmakers offer fixed odds on a number of non-sports related outcomes, for example the direction and extent of movement of various financial indices, whether snow will fall on Christmas Day in a given area, the winner of television competitions such as Big Brother, and so forth. Interactive prediction markets also offer trading on these outcomes, with "shares" of results trading on an open market.

See *Sports betting* below.

Gambling on horse races

One of the most widespread forms of gambling involves betting on horse races, most commonly on races between thoroughbreds or between standardbreds.

Wagering may take place through parimutuel pools; or bookmakers may take bets personally. Parimutuel wagers pay off at prices determined by support in the wagering pools, while bookmakers pay off either at the odds offered at the time of accepting the bet; or at the median odds offered by track bookmakers at the time the race started.

In Canada and the United States, the most common types of bet on horse races include:

- **win** – to succeed the bettor must pick the horse which wins the race.
- **place** – the bettor must pick a horse which finishes either first or second.
- **show** – the bettor must pick a horse which finishes first, second, or third.
- **exacta**, **perfecta**, or **exactor** –the bettor must pick the two horses which finish first and second and specify which will finish first
- **quinella** or **quiniela** – the bettor must pick the two horses which finish first and second, but need not specify which will finish first.
- **trifecta** or **triactor** – the bettor must pick the three horses which finish first, second, and third and specify which will finish first, second and third.
- **superfecta** – the bettor must pick the four horses which finish

first, second, third and fourth, and specify which will finish first, second, third and fourth.

- **double** – the bettor must pick the winners of two successive races; most race tracks in Canada and the United States take double wagers on the first two races on the program (the **daily double**) and on the last two (the **late double**).
- **triple** – the bettor must pick the winners of three successive races; many tracks offer **rolling triples**, or triples on any three successive races on the program. Also called **pick three.**
- **sweep** – the bettor must pick the winners of four or more successive races. In the US, this is usually called **pick four** and **pick six,** with the latter paying out a consolation return to bettors correctly selecting five winners out of six races, and with "rollover" jackpots accumulating each day until one or more bettors correctly picks all six winners.

Win, place and show wagers class as **straight bets**, and the remaining wagers as **exotic bets**. Bettors usually make multiple wagers on exotic bets. A **box** consists of a multiple wager in which punters bet all possible combinations of a group of horses in the same race. A **key** involves making a multiple wager with a single horse in one race bet in one position with all possible combinations of other selected horses in a single race. A **wheel** consists of betting all horses in one race of a bet involving two or more races. For example a 1-all daily double wheel bets the 1-horse in the first race with every horse in the second.

People making straight bets commonly employ the strategy of an 'each way' bet. Here the bettor picks a horse and bets it will win, and makes an additional bet that it will show, so that theoretically if the horse runs third it will at least pay back the two bets. The Canadian and American equivalent is the bet across (short for *across the board*): the bettor bets equal sums on the horse to win, place, and show.

In Canada and the United States punters make exotic wagers on horses running at the same track on the same program. In the United Kingdom bookmakers offer exotic wagers on horses at different tracks. Probably the **Yankee** occurs most commonly: in this the bettor tries to pick the winner of four races. This bet also includes subsidiary wagers on smaller combinations of the chosen horses; for example, if only two of the four horses win, the bettor still collects for their double. A **Trixie** requires trying to pick three winners, and a **Canadian** or **Super Yankee** trying to pick five; these also include subsidiary bets. The term **nap** identifies the best bet of the day.

A **parlay** (US) or **accumulator** (UK) consists of a series of bets in which bettors stake the winnings from one race on the next in order until either the bettor loses or the series completes successfully.

(Similarly, greyhound racing offers a popular betting alternative to horse racing in many countries.)

Sports betting

Betting on team sports has become an important service industry in many countries. For example, millions of Britons play the football pools every week. At sports betting, players may beat the bank.

Most jurisdictions in Canada and the United States regard sports betting as illegal (Nevada offers full sports betting and the Canadian provinces offer Sport Select - government-run sports parlay betting). However, millions engage in sports betting despite its illegality.

In Canada and the United States the most popular sports bets include:

- against the spread - the bettor wagers either that the favoured team will win by a specified number of points or that it will not. *Giving the points* involves betting the favourite, and *taking the points* means betting the underdog. A team covers the spread if it wins the game with the score modified by the spread. If Dallas and Washington are playing and the spread is (Dallas -7), then Dallas has to win by at least 8 points to cover. Half-point spreads are also possible and the spread may not change.
- against odds - the most popular types of bets against odds comprise simple bets that a team will win and *over-under* (bets on the total points, runs, or goals scored by both teams). In making an over-under bet, the bettor wagers that the total will exceed or fall short of a total specified by the bookmaker.
- against a combination of odds and spread

In sports betting, a **parlay** involves a bet that two or more teams will win. In the United States gamblers have made the parlay card one of the most common forms of sports betting: here bettors wager on the outcomes of two or more games. If all their picks win, they collect. Most such betting occurs in workplaces. A teaser is one type of parlay where the bettor can alter the point spreads on the two games in the bet.

Scratchcards

A scratchcard is a small piece of card where an area has been covered by a substance that cannot be seen through, but can be scratched off. Under this area are concealed the items/pictures that must be 'found' in order to win.

The generic scratchcard requires the player to match three of the same prize amounts. If this is accomplished, they win that amount. Other scratchcards involve matching symbols, pictures or words.

Scratchcards are a very popular form of **gambling** due to their low cost. However, the low cost to buy a scratchcard is offset by the smaller prizes, compared to casino jackpots or lottery wins.

Other types of betting

One can also bet with another person that a statement is true or false, or that a specified event will happen (a "back bet") or will not happen (a "lay bet") within a specified time. This occurs in particular when two people have opposing but strongly-held views on truth or events. Not only do the parties hope to gain from the bet, they place the bet also to demonstrate their certainty about the issue. Some means of determining the issue at stake must exist. Sometimes the amount bet remains nominal, demonstrating the outcome as one of principle rather than of financial importance.

Arbitrage betting

Arbitrage betting, deceptively advertised as no-risk or risk-free betting, is a special case of betting on events offered by betting websites which is not gambling but rather an unusual investment practice.

Staking systems

Many people have formulated staking systems in an attempt to "beat the bookie", but most still accept that no staking system can make an unprofitable system profitable over time. Widely-used systems include:

- Fixed stakes – a traditional system of staking the same amount on each selection. This method suits conservative punters if the stake remains below 5% of the bank.
- Fixed profits – the stakes vary based on the odds to ensure the same profit from each winning selection. This method suits conservative punters well, although if the profitability of one's bets varies independently of the odds the bettor simply reduces his or her cash flow.
- Due-column betting – A variation on fixed profits betting in

which the bettor sets a target profit and then calculates a bet size that will make this profit, adding any losses to the target. For example, to make a target of $100 profit a bettor would wager $50 at odds of 2 to 1. If the bet loses, the target becomes $150. If the next bet is also at odds of 2 to 1, the wager therefore becomes $75. This type of wagering can prove ruinous in the long run.

- Kelly (optimal) – the punter needs to estimate fair odds (in the European/decimal format) and then calculate the stake using :

  Stake= (Odds/(Fair odds-1))/(Odds-1) Many times used with a divider (most commonly 4 or 8) depending on your bankroll (for betting)

- Martingale – A system based on staking enough each time to recover losses from previous bet(s) until one wins. It is usually applied to even-money bets such as red/black on roulette. The Martingale guarantees failure in the long run - it would only work if the bettor has an unlimited bankroll, the bookmaker has no limit on the size of bets and neither party ever dies. However, it can usually be used to gain a small win in the short run, given a bankroll large enough to survive a streak of five or six losses.

List of notable wagers

The man who broke the bank at Monte Carlo
Pascal's wager
St. Petersburg paradox
The wager in Around the World in Eighty Days
Wager between John Pierpoint Morgan and Hugh Cecil Lowther, 5th Earl of Lonsdale on whether a man could walk round the world and remain unidentified
Wager between Julian Simon and Paul Ehrlich on commodity prices
The annual Nenana Ice Classic, when the inhabitants of Alaska bet on when the ice will break on the Tanana River.
Wager on Black hole information paradox: Stephen Hawking and Kip Thorne against John Preskill

Associated word usage

- The English expression "I bet that *xxxxx*", meaning "I consider it very probable that *xxxxx*", need not carry any suggestion of the speaker intending to gamble.

- The English word hazard originated as Arabic az-zr or al-zr, which meant a type of dice game. Compare also the English word "dicey" meaning "risky".
- Scientists have dubbed certain random-number-based calculation algorithms the "Monte Carlo method".
- **Even money**, as a gambling term, describes a wagering proposition with even odds - in other words, if one loses a bet, one stands to lose the same amount of money that the winner of the bet would win (less, of course, the vigorish or "juice"). The term has come to have meaning in the wider English usage beyond actual gambling, however, as a way of describing an event whose occurrence is about as likely to occur as not, as in "It's even money that it will rain today". Compare *50 50*.

See also

- Casino
- Online casino
- casino game

Bibliography

Brisman, Andrew. American Mensa Guide to Casino Gambling: Winning Ways (Stirling, 1999) ISBN 080694837X
Ortiz, Darwin. Gambling Scams: How They Work, How to Detect Them, How to Protect Yourself (Carol, 1990) ISBN 0396083668 (Hardcover) ISBN 0818405295 (Paperback)
Reith, Gerda. Age of Chance: Gambling in Western Culture ISBN 0415179971 (Hardcover) ISBN 0415263093 (Paperback)
Steinmetz, Andrew. The Gaming Table: Its Votaries and Victims Gutenberg text
Thorp, Edward O. Beat the Dealer: A Winning Strategy for the Game of Twenty-One (Vintage, 1966) ISBN 0394703103

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Sports Betting

Sports betting

is the general activity of predicting sports results by making a wager on the outcome of a sporting event. Perhaps more so than other forms of gambling, the legality and general acceptance of sports betting varies from nation to nation. In North America, for example, sports gambling is generally forbidden, while in many European nations, bookmaking (the profession of accepting sports wagers) is regarded as an honorable occupation and, while highly regulated, is not criminalized. Proponents of legalized sports betting generally regard it as a hobby for sports fans that increases their interest in particular sporting events, thus benefitting the leagues, teams and players they bet on through higher attendances and television audiences. Opponents fear that, over and above the general ramifications of gambling, it threatens the integrity of amateur and professional sport, the history of which includes numerous attempts by sports gamblers to fix matches, although proponents counter that legitimate bookmakers will invariably fight corruption just as fiercely as governing bodies and law enforcement do.

Types of bets

Aside from simple wagers--betting a friend that one's favorite baseball team will win its division, for instance, or buying a football "square" for the Super Bowl--sports betting is commonly done through a bookmaker. Legal sports bookmakers exist throughout the world (perhaps most notably in Las Vegas). In areas where sports betting is illegal, bettors usually make their sports wagers with illicit bookmakers (known colloquially as "bookies") and on the Internet, where thousands of online bookmakers accept wagers on sporting events around the world. (In the United States, the legality of Internet wagering is ambiguous, due to the fact that online bookmakers generally operate outside of the U.S.) The bookmaker earns a commission or "vigorish" (normally 10 percent) on all losing wagers, and pays out a predetermined amount to winning bets. Odds on teams or opponents are quoted in terms of the *favorite* (the team that is expected to win, thus requiring a riskier wager) and the *underdog*.

Bookmakers generally offer two types of wagers on the winner of a sporting event: a *straight-up* or money line bet, or a point spread wager. Moneylines and straight-up prices are used to set odds on sports such as soccer, baseball and hockey (the scoring nature of which renders point spreads impractical) as well as individual vs. individual matches, like boxing. For these sports, bookmakers in Europe and Asia generally use straight-up odds, which are quoted based on a payout for a single bet unit; for example, a 2-1 favorite would be listed at a price of 1.50, whereas an underdog returning twice the amount wagered would be listed at a price of 3.00.

American bookmakers generally use moneylines, which are quoted in terms of the amount required to win $100 on a favorite, or the amount paid for a $100 bet on an underdog. The amount "won" in a bet is the net amount over and above the initial bet. If a person wins $200 on a bet of $100, the bookmaker actually pays the winner $300 (i.e. $200 plus the initial bet of $100).

For example, a baseball game between the St. Louis Cardinals and Chicago Cubs might have a moneyline on St. Louis (the favorite) at -200 and Chicago (the underdog) at +180. A bettor looking to take St. Louis must risk $200 for every $100 he wishes to win over and above the initial $200 bet. A person wagering on Chicago will win $180 for every $100 he bets.

The +180 moneyline on Chicago includes a 20 cent "dime line". Bookmakers generally use a "dime line" with moneylines to calculate the vigorish they receive on losing wagers. Without the 20 cent dimeline in the example above, the Chicago moneyline would be +200.

For favorites of -120 to -150, the difference between the favorite and underdog is 10 cents; i.e., the underdog to a -120 favorite is priced at +110. The discrepancy between prices rises for favorites of -160 or higher.

Unlike point spread bets, a moneyline wager requires only that the team wagered upon win the match. In sports such as baseball, where certain teams can be heavy favorites against weaker opponents (sometimes as much as -350 or higher), the moneyline system requires that a hefty sum be risked on the favorite, while enticing underdog players with a higher payout.

In sports such as basketball and American football, rather than varying the money odds (which can be substantial in lopsided matches), the point spread is used. A point spread wager typically requires a bettor to risk $110 to win $100, the extra $10 being the bookmaker's vigorish if the wager loses. However, bettors backing the favorite collect only if their team wins by more than a specific victory margin, which is set at the time of the wager. Similarly, underdog bettors can collect even when their team loses, as long as they *cover* the point spread by losing by fewer points than were quoted by the bookmaker. For example, suppose that a college football game between Oklahoma and Kansas had Oklahoma as a 27 point favorite (quoted as Oklahoma -27, or Kansas +27):

- If Oklahoma defeats Kansas by **more than** 27 points, bettors on Oklahoma would receive $100 on a $110 bet. Kansas bettors lose the $110 they wagered.
- If Kansas defeats Oklahoma, bettors on Kansas would receive

$100 on a $110 bet. Oklahoma bettors lose the $110 they wagered.

- If Kansas loses by **less than** 27 points, they have covered the spread. Bettors on both sides are then treated exactly as if Kansas had won the game.
- If Oklahoma wins by **exactly** 27 points, the wager is called a "push", and neither side wins. Standard practice by U.S. bookmakers is to return the stakes of all bettors on the game in full. To prevent pushes and ensure that they receive their commission on losing wagers, bookmakers typically set point spreads that include a half-point.

Another common wager available for sporting events involves predicting the combined total score between the competing teams in a game. Such wagers are known as "totals" or "over/unders." For example, the Oklahoma/Kansas football game described above might have a total of 55 points. A bettor could wager that both teams will combine for over 55 points, and play the "over." Or, she could predict that the score will fall under this amount, and play the "under." As with point spreads, bookmakers frequently set the totals at a number involving a half-point (i.e., 55.5), to reduce the occurrence of pushes.

Many bookmakers offer several alternative bets, including the following:

- *Proposition bets*. These are wagers made on a very specific outcome of a match. Examples include guessing the number of goals each team scores in a soccer match, betting whether a wide receiver in a football game will net more or less than a set amount of total yardage, or wagering that a baseball player on one team will accumulate more hits than another player on the opposing team.
- *Parlays*. A parlay involves multiple bets (usually up to 12) and rewards successful bettors with a large payout. For example, a bettor could include four different wagers in a four-team parlay, whereby he is wagering that all four bets will win. If any of the four bets fails to cover, the bettor loses the parlay, but if all four bets win, the bettor receives a substantially higher payout (usually 10-1 in the case of a four-teamer) than if he made the four wagers separately.
- *Run line, puck line or goal line bets*. These are wagers offered as alternatives to straight-up/moneyline prices in baseball, hockey or soccer, respectively. These bets feature a fixed point spread that offers a higher payout for the favorite and a lower one for the underdog. For example, the above-described Cardinals/Cubs baseball game might offer a run line of St. Louis -1.5 (+100)

and Chicago +1.5 (-120). A bettor taking St. Louis on the run line can avoid risking $200 to win $100 on the moneyline, but will collect only if the Cardinals win by 2 runs or more. Similarly, a run line wager on the Cubs will pay if Chicago loses by no more than a run, but it requires the bettor to risk $120 to win $100.

- *Future wagers*. This bet predicts a future accomplishment by a team or player. One example is a bet that a certain NFL team will win the Super Bowl for the upcoming season. Odds for such a bet generally are expressed in a ratio of units paid to unit wagered. The team wagered upon might be 50-1 to win the Super Bowl, which means that the bet will pay 50 times the amount wagered if the team does so.

Bookmaking

Most people believe that bookmakers attempt to "balance" their action, by adjusting their prices so that they get the same amount of money on both sides of a game. Theoretically, the bookmaker's only financial interest in the bets it accepts is the vigorish it takes from losing wagers, and it simply wants to ensure that the amount of wagers on each side is equal. In reality, however, bookmakers attempt to maximize their bottom line. While having an exactly equal amount of money wagered on each contestant would guarantee themselves a profit and eliminate their risk, that wont necessarily maximize their bottom line. They can make more money when they accept bets at odds which are "inflated" from those which are likely to occur. So for example, if the majority of their customers are going to bet on a team regardless of the price, they will set the price as high as possible. Some bookmakers actually offer different prices to different customers, using past bets as an indicator of who the customer will bet on as a way of additionally increasing their potential profit.

With a match offering a point spread, however, bookmakers must be careful of moving the line too much. Assume, for example, that a large number of Oklahoma bettors caused the line to be moved from 27 points all the way to 29 points. If Oklahoma won the game by 28 points, the bookmaker would have to pay both those who wagered that Oklahoma would win by 27 and those who took Kansas on the 29 point spread. Bookmakers refer to such an event as "being middled." This famously occurred in the 1979 Super Bowl between the Pittsburgh Steelers and Dallas Cowboys, which American bookmakers still remember as "Black Sunday." For that game, bookmakers opened

Pittsburgh as a 3.5 point favorite, and the line closed just before kickoff at Pittsburgh -4.5. Pittsburgh won the game 35-31, enabling both those who took the Steelers -3.5 and those who wagered on the Cowboys +4.5 to collect.

Sometimes, a point spread is set at an amount that equals a common margin of victory for a particular sporting event. For instance, American football games are often decided by 3 points (the amount awarded for a field goal) or 7 points (the amount awarded for a touchdown with a successful extra-point attempt). In the case of a football game where the favorite is -7, moving the line up or down would likely result in a middle if the favorite wins by exactly 7 points. In this situation, the bookmaker may choose to adjust the vigorish in response to unbalanced action, rather than move the point spread. If the 7 point favorite is getting the most wagers, a bookmaker may change the vigorish on that team from -7 (-110) to -7 (-120), and move the underdog to +7 (+100). Once this occurs, bettors looking to wager on the favorite must risk $120 for every $100 they wish to win, while underdog players will get even money for every dollar they wager.

A bookmaker's line can be influenced by one or several large wagers made on a match. Bookmakers pay particular attention to the bets of a professional sports gambler, commonly known within the industry as a "sharp" or "wiseguy." Some bookmakers will not accept bets from bettors they believe fit in this category. As a result, professionals use "beards" to make the bets for them. Groups of professionals who work together are known as a "syndicate." These syndicates will often place large wagers with several books simultaneously, causing the prices to move quickly. Observers refer to these fast line movements as "steam."

The Federal Wire Act of 1961 was an attempt by the US government to prevent illegal bookmaking.

Betting scandals

Historically, sports betting has been associated with a number of unsavory characters, which has a lot to do with its desultory legal treatment throughout the world. Organized crime notoriously has relied upon sports betting for money laundering or funding purposes. The corruption or threat of a boxer to take a dive at the x round is a frequent theme in mafia-related movies. All of the American professional sports leagues, as well as the National College Athletic Association (NCAA), take stringent measures to disassociate themselves from sports gambling. Nevertheless, sports history is riddled with several incidents of athletes conspiring with gamblers to fix the outcomes of sporting events, or criminals acting against athletes whose on-field performance affected their wagers.

In 1919, gamblers bribed several members of the Chicago White Sox to throw the World Series. This became known as the Black Sox Scandal and was recounted in book and movie form as "Eight Men Out".

In 1978, mobsters connected with the New York Lucchese crime family, among them Henry Hill and Jimmy Conway, organized a point shaving scheme with key members of the Boston College basketball team.

Andrés Escobar, a Colombian defender, was murdered shortly after his return from the 1994 World Cup, where he scored an own goal, the first of a 2-1 defeat to the USA that knocked out the Colombians at the first phase. In the most believed explanation, the Medellín drug cartel bet large sums of money that Colombia would advance, and blamed the Medellín-born Escobar for the loss. 1

In 1994, a comprehensive point shaving scheme organized by campus bookmaker Benny Silman and involving players from the Arizona State University men's basketball team was uncovered with the assistance of Las Vegas bookmakers, who grew suspicious over repeated large wagers being made against Arizona State.[1]

On 10 February 1999, a plot to disable the floodlights of The Valley during a Charlton-Liverpool match was discovered. Three individuals were arrested, and the scam tracked to Malaysia, where the Premiership is very popular, and bets frequent. 1

In early 2000, Hansie Cronje, then highly-regarded captain of the South African cricket team, rocked the cricketing world with frank admissions of match-fixing. Hansie admitted to receiving more than $140,000 USD from London-based bookies to influence aspects of his team's performance. For example, he convinced Herschelle Gibbs to score less than 20 runs in a One Day International for a $15,000 USD reward. Hansie received a lifetime ban from any involvement in professional cricket but he maintained throughout his numerous trials that he never consipired to fix overall match results. He died tragically in a plane crash in 2002, leaving behind many unanswered questions and a tainted legacy.

In late 2004, the game between Panionios and Dinamo Tbilisi in the 2004-05 UEFA Cup was suspected of being fixed after British bookmakers detected an unusually high number of half-time bets for a 5-2 win for the Greek side, which was trailing 0-1. As the final result ended up being 5-2, suspicions of fixing quickly emerged, but were quickly denied by both clubs, although UEFA started an investigation. 1 2

The Italian Football Federation said in October 2000 it had found eight players guilty of match-fixing. Three were from Serie A side Atalanta and the other five played for Serie B side Pistoiese. The players were Giacomo Banchelli, Cristiano Doni and Sebastiano Siviglia (all Atalanta) and Alfredo Aglietti, Massimiliano Allegri, Daniele Amerini, Gianluca Lillo and Girolamo Bizzarri (all Pistoiese). The charges related to an Italian Cup first round tie between the two sides in Bergamo on August 20, 2000 which ended 1-1. Atalanta scored at the end of the first half and Pistoiese equalised three minutes from full time. Atalanta qualified for the second round. Snai, which organises betting on Italian football, said later it had registered suspiciously heavy betting on the result and many of the bets were for a 1-0 halftime score and a fulltime score of 1-1.

In early 2005, the German Football Association (DFB) revealed that referee Robert Hoyzer was under investigation for suspected betting on a first-round German Cup tie between regional league side Paderborn and Bundesliga club Hamburger SV in August 2004, and possibly fixing the match. In the match, HSV took a 2-0 lead, but Hoyzer sent off HSV striker Emile Mpenza in the first half for alleged dissent (a sending-off that many observers considered unwarranted), and later awarded Paderborn two dubious penalties. Paderborn went on to win 4-2. 1 Several days later, Hoyzer admitted to having fixed that match, as well as several others he worked. He went on to implicate other referees and several players in the scandal. Hoyzer himself was arrested on February 12 after evidence emerged that he may have fixed more matches than he had admitted to fixing. On February 16, UEFA announced that it would send an investigator to Athens to investigate possible links between this scandal and the aforementioned Panionios-Dinamo UEFA Cup tie. 2 Eventually, Hoyzer was sentenced to 2 years and 5 months in prison. The Croatian betting syndicate which had paid Hoyzer to fix matches was also found to be linked to the Panionios-Dinamo match.

In late September 2005, two referees (Edilson Pereira de Carvalho and Paulo Jose Danelon) were accused of fixing several matches in the São Paulo championship for a internet betting ring that moved over USD100,000 on each match day, receiving around USD 4,400 for each match 1. In the following days, Armando Marques, president of the national comission of referees resigned and Nagib Fayad and Vanderlei Pololi, two businessmen, were arrested as suspects of working as middlemen between the referees and the corruption ring. In early October, a court ordered that the matches where Carvalho was the referee would have to be replayed and free to the public 2. No decision was made about Danelon's matches.

See also

- gambling

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Dice Games

Dice games are quite universal. Though they are clearly games of chance, as for example in casino games, they are also used under the hood for interpersonal interactions.

Dice also appear as a random device, for example in games of status. Pure games of dice include:

Craps
Dice 10000 / 5000 / 1000
Farkel
Kuriki
Liar's dice
Mia
Mr. Three
Pig
Shut the Box
Yahtzee
Dicer Game

Patterned after the success of collectible card games, a number of collectible dice games have been published. Although most of these collectible dice games are long out-of-print, there is still a small following for many of them.

An inexhaustive list of collectible dice games that have been published includes:

Dragon Dice (SFR, Inc.) - The original collectible dice game
Dicemaster (Iron Crown Enterprises)
Throwing Stones (Gamesmiths, Inc.)
Demon Dice aka "Chaos Progenitus" (Fast Forward Games) [1]
Marvel Super Dice (TSR, Inc.)
Star Trek The Next Generation Collectible Dice Game (Alderac Entertainment Group)
Rolled Bones (D'Ice, Inc.) [2]
Harry Potter Dicers (Hasbro)
Cookie Fu (Blue Kabuto) [3]
LCR

Some online dice games may be played at:

Petals Around the Rose
Checkmate!
Pig

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Scrabble

Players: 2-4
Age range: 8 and up
Setup time: 2-5 minutes
Playing time: NSA tournament game: ~50 minutes
Rules complexity: Easy
Strategy depth: Medium
Random chance: Medium
Skills: required

Counting, Strategy, Vocabulary

Scrabble is a popular word board game, in which two to four players score points by forming words from individual lettered tiles on a 15x15 game board. The words are formed across and down in a crossword fashion, and must appear in a standard dictionary. Official reference works which provide a list of permissible words, some of which are rarely found in standard English writing, are also available.

Each letter is worth a set number of points, with the value depending on the letter's frequency in standard English writing; commonly-used letters such as E or O are worth one point, whilst less common letters score higher, with Q and Z each scoring ten points. The board is marked with "premium" squares, which multiply the amount of points awarded. Some premium squares multiply the value of an individual letter, whilst some multiply the value of entire words.

The name *Scrabble* is a trademark of Hasbro, Inc. in the US and Canada and of J. W. Spear & Sons PLC elsewhere. Scrabble was a trademark of Murfett Regency in Australia, until 1993 when it was acquired by Spears.

History

The game was created by architect Alfred Mosher Butts in 1938, as a variation on an earlier word game he invented called Lexiko. The two games had the same set of letter tiles, whose distributions and point values Butts worked out meticulously by counting letter usage from the New York Times and other sources. The new game, which he called "Criss-Crosswords", added the 15-by-15 game board and the crossword-style game play. He manufactured a few sets himself, but was not successful in selling the game to any major game manufacturers of the day.

In 1948, lawyer James Brunot bought the rights to manufacture the game in exchange for granting Butts a royalty on every unit sold. Though he left most of the game (including the distribution of letters) unchanged, Brunot slightly rearranged the "premium" squares of the board and simplified the rules; he also changed the name of the game to "Scrabble", and sold sets to, among other customers, Macy's department store, which created a demand for the game.

In 1953, unable to meet demand himself, Brunot sold manufacturing rights to Selchow and Righter (one of the manufacturers who, like Parker Brothers and Milton Bradley Company, had previously rejected the game). J. W. Spear & Sons began selling the game in Australia and the UK on January 19, 1955. They are now a subsidiary of Mattel, Inc.

In 1986, Selchow and Righter sold the game to Coleco, who soon after sold the game to Hasbro.

The game is commonly known as Alfapet in Sweden.

In 2005, a Welsh language version of Scrabble was launched, with separate tiles for Welsh letters such as CH, DD, FF, NG, LL, PH, RH and TH.

Game details

The game is played with two to four players on a square (or nearly square) board with a 15-by-15 grid of cells, each of which accommodates a single letter tile. In official club and tournament games, play is always between two players (or, occasionally, between two teams each of which collaborates on a single rack).

An important feature of the game is the presence of color-coded "premium squares" affecting scoring: dark red "triple word" cells, pink "double word" cells, dark blue "triple letter" cells, and light blue "double letter" cells. (The distribution of premium cells is shown on the diagram at right.) The center cell (H8) is often marked with a star or logo, and counts as a double-word cell.

Notation system

In the notation system common in tournament play, columns are labeled "A-O" and rows "1-15". A play is usually identified in the format **xy WORD score** or **WORD xy score**, where: **x** denotes the column or row on which the play's main word extends; **y** denotes the second coordinate of the main word's first letter, and **WORD** is the main word. Although unnecessary, additional words formed by the play are occasionally listed after the main word and a slash. In the case where the play of a single tile formed words in each direction, one of the words is arbitrarily chosen to serve as the main word for purposes of notation.

When a blank tile is employed in the main word, the letter it has been chosen to represent is indicated with a lower case letter, or, in handwritten notation, with a square around the letter. Parentheses are sometimes also used to designate a blank, although this may create confusion with a second (optional) function of parentheses, namely indication of an existing letter or word that has been "played through" by the main word.

Example:

A(D)DITiON(AL) D3 74

(played through the existing letter D and word AL, using a blank for the second I, extending down the D column and beginning on row 3, and scoring 74 points)

Sequence of play

Before the game, the letter tiles are either put in an opaque bag or placed face down on a flat surface. Opaque cloth bags, along with Protiles, are staples of clubs and tournaments, where games are rarely played without both.

Next, players decide the order in which they play. According to NSA tournament rules, players who have gone first in the least number of times in the tournament have priority. In both the case of a tie and in the regular Scrabble rules, players instead draw tiles, then reveal them. Players who pick a letter closer to the beginning of the alphabet go first (with blank tiles ranked higher than As), and redraw in the case of a tie.

At the beginning of the game, and after each turn until the bag is empty (or there are no more face-down tiles), players draw tiles to replenish their "racks", or tile-holders, with seven tiles, from which they will make plays. Each rack is concealed from the other players.

During a player's turn, they will have seven letter tiles in their rack from which to choose a play. On their turn, players have the option to: (1) pass, forfeiting the turn and scoring nothing; (2) exchange one or more tiles for an equal number from the bag, scoring nothing, an option which is only available if at least seven tiles remain in the bag; (3) form a play on the board, adding its value to the player's cumulative score; or (4) challenge the previous player's move on the grounds that an unacceptable word was made (see **Acceptable Words** and **Challenges**).

A proper play uses any number of the player's tiles to form a single continuous word ("main word") on the board, reading either left-to-right or top-to-bottom. The main word must either use the letters of one or more previously played words, or else have at least one of its tiles horizontally or vertically adjacent to an already played word. If words other than the main word are newly formed by the play, they are scored as well, and are subject to the same criteria for acceptability.

At the very beginning of play, when the board is blank, a player must form a word which covers H8, the center cell. The word must consist of at least two letters, extending horizontally or vertically. H8 is a premium tile, and the first player to make a play receives a double score.

A blank tile may take the place of any letter. It remains as that letter thereafter for the rest of the game. Individually, it scores no points regardless of what letter it is designated, and is not itself affected by premium tiles. However, its placement on a double-word or triple-word cell does cause the appropriate premium to be scored for the word in which it is used. While not part of official or tournament play, a common "house rule" allows players to "recycle" blank tiles by later substituting the corresponding letter tile.

After playing a word, the player draws letter tiles from the bag to replenish his rack to seven tiles. If there are not enough tiles in the bag to do so, the player takes all of the remaining tiles.

After a player plays a word, his opponent may choose to challenge any or all the words formed by the play. If any of the words formed are found to be unacceptable, the play is removed from the board, the player returns the newly-played tiles to his rack, and his turn is forfeited. Penalties for unsuccessfully challenging an acceptable play vary within club and tournament play, and are described in greater detail below.

With North American rules, the game ends when (1) one player plays every tile in his rack, and there are no tiles remaining in the bag (regardless of the tiles in his opponent's rack); or (2) when six successive scoreless turns have occurred and at least one word is on the board. In the first case, the player who uses all of his tiles receives a bonus of twice the point value of his opponent's remaining tiles. Scoreless turns can occur when a phony word is challenged off the board, when a player passes, when a player exchanges tiles, or when a word consists only of blank tiles. This latter rule varies slightly in international play.

Scoring

Some diagrammed Scrabble scoring examples may help to clarify the play.

Each word formed in the play is scored this way: first, any tile played from the player's rack onto a previously vacant cell that is a "double letter" or "triple letter" premium cell has its point value doubled or tripled as indicated. To this is added the normal point value of every other letter in the word (whether newly played or existing). Then, if any newly-played tile was placed on a "double word" premium cell, the total is doubled. Likewise if any newly-placed tile was on a "triple word" premium cell, the total is tripled. If two newly-placed tiles in the word are played on double-word cells, the total is doubled, and then redoubled, scoring four times the letter total. Likewise, a word played with two new tiles on triple-word cells is tripled and then retripled for nine times the letter score. In the unlikely but possible event that a 15-letter word is formed using new tiles on three triple-word cells (this requires using at least eight previously placed letters on other cells), the letter score is multiplied by twenty-seven. It is not possible for double word and triple word cells to be used in the same word (since there are no such cells in the same row or column of the board). Finally, if a player uses all seven of the tiles in his rack in a single play, a bonus of 50 points is added to the score of that play (this is called a "bingo" in Canada and the United States, and a "bonus" elsewhere). These bonus points are not affected by premium cells. Premium cells, once played, are not counted again if another word is formed using a letter previously placed on a premium cell.

Acceptable words

Acceptable words are those words found as primary entries in some chosen dictionary, and all of their inflected forms. Words that are hyphenated, capitalized (such as proper nouns), marked as foreign, or appear only as part of multi-word phrases are not allowed (unless they also appear as acceptable entries: "Japan" is a proper noun, but the verb "japan" — to decorate with black enamel or lacquer — is acceptable). Variant spellings, slang or offensive terms, archaic or obsolete terms, and specialized jargon words are allowed if they meet all other criteria for acceptability. "College" level dictionaries are generally used in preference to unabridged dictionaries.

In formal competition, pre-compiled official word lists are used (usually compiled from combinations of several college dictionaries), along with an official dictionary for backup. The pre-compiled word lists generally contain only words of two to eight letters — those most frequently used in the game. (One letter words are impossible to play, and you only get seven tiles on the rack at one time, so it is very difficult to build a word that is longer than eight letters.) The dictionary is consulted for longer words.

There are two popular competition word lists: the North American 1998 *Official Tournament and Club Word List* (OWL) (or for school use the bowdlerized Official Scrabble Players Dictionary, Fourth Edition (OSPD4) and the British Official Scrabble Words. North American competitions use the Long List for longer words, while the British use the Chambers Dictionary (but may soon change to the Collins Dictionary). Many online Scrabble sites use some version of the *Tournament Word List* (TWL), which is a combination of the OWL and Long List. On March 1, 2006, the OWL2 will replace the OWL in (American, Canadian, Israeli, and Thai) tournament play.

The OWL and the OSPD4 are compiled using seven major dictionaries, including Merriam-Webster (10th and 11th Editions, respectively). If a word appears in at least five of the seven dictionaries, it is included in the OWL and the OSPD4, unless the word has an offensive meaning, in which case it is only included in the OWL The key differences between the OSPD4 and the OWL is that the OSPD4 marketed for "home and school" use, and has been expurgated of many words judged offensive; the OSPD4 is available in bookstores, whereas the OWL is only available from the National Scrabble Association.

Many international competitions use the combination of the British and American word lists; the union of the two lists is commonly referred to as SOWPODS, derived from an anagram of OSPD + OSW. Many countries in the English Scrabble-playing world now use SOWPODS (published in the UK as Official Scrabble Words International, or OSWI) for their own tournaments year-round, with the United States, Canada, Israel, and Thailand being notable exceptions.

Challenges

The penalty for a successfully challenged play is nearly universal: the offending player removes the tiles played and forfeits the turn. However, the penalty for an unsuccessful challenge (where all words formed by the play are deemed valid), varies considerably, including:

- The "double challenge" rule, in which an unsuccessfully challenging player must forfeit their turn. This penalty governs

North American (NSA-sanctioned) tournaments, and is the standard for North American clubs. (It is also the standard in Israel and Thailand.) Because loss of a turn generally constitutes the greatest risk for an unsuccessful challenge, it provides the greatest incentive for a player to "bluff" with a plausible word that they know or suspect to be unacceptable. Players have divergent opinions on this aspect of the double-challenge game.

- A pure "single challenge" or "free challenge" rule, in which no penalty whatsoever is applied to a player who unsuccessfully challenges. This is the official rule in the United Kingdom and Ireland, and well as for many tournaments in Australia.

- A modified "single challenge" rule, in which an unsuccessful challenge does not result in the loss of the challenging player's turn, but is penalized by the loss of a specified number of points. The most common penalty is 5 points, the rule in South Africa (since 2003), New Zealand (since 2004), and Kenya, as well as in contemporary World Scrabble Championships. Some countries and tournaments use a 10-point penalty instead. In most game situations, this penalty is much lower than that of the "double challenge" rule; consequently, such tournaments encourage a greater willingness to challenge and a lower willingness to play dubious words..

Club and tournament play

Tens of thousands play club and tournament Scrabble worldwide. The intensity of play, obscurity of words, and stratospheric scores in tournament games may come as a shock to many parlor players.

All tournament (and most club) games are played with a game clock and a set time control. Typically each player has twenty-five minutes in which to make all of his or her plays. For each minute by which a player oversteps the time control, a penalty of ten points is assessed. The number of minutes is rounded up, so that if a player oversteps time control by two minutes and five seconds, the penalty is thirty points. In addition, the players use special tiles called Protiles which are not engraved, like wooden tiles are, thereby eliminating the potential for a cheating player to "braille" (feel for particular tiles, especially blanks, in the bag).

Players are allowed "tracking sheets", preprinted with the letters in the initial pool, from which tiles can be crossed off as they are played. "Tracking" tiles is an important aid to strategy, especially during the "endgame", when no tiles remain to be drawn and each player can determine exactly what is on the opponent's rack.

The most prestigious (regularly held) tournaments include:

1. **The World Scrabble Championship**: held in odd years, the last was in London in 2005.
2. **The American National Championship**: an open event attracting several hundred players, held in the summer in even years (usually) until 2004, and annually afterwards, the 2005 event having been in Reno, Nevada.
3. **The Canadian National Championship**: invitational to the top fifty players, held every two to three years.

Clubs in North America typically meet one day a week for three or four hours and charge a small admission fee to cover their expenses and prizes. Clubs also typically hold at least one open tournament per year. Tournaments are usually held on weekends, and between six and nine games are played each day. During off hours at tournaments, many players socialize by playing consultation (team) Scrabble, Clabbers, Anagrams, Boggle and other games.

Strategy and tactics

The object of the game is to score more points than your opponent. The key skills are knowing which words are acceptable or unacceptable (according to the official tournament reference) and being able to find them from a jumbled set of letters. All serious tournament players study word lists extensively, and practice solving words from alphagrams or randomly jumbled letters. It is doubtful that any player — even those among the top echelon — knows all 108,225 acceptable words for international play. But it is almost certain that the premier players know almost all, if not all, of the words they are likely to come across in their lifetime. For instance, there is no practical advantage in knowing a word like ZYZZYVAS, as this would require an extremely improbable rack containing both Ys, both blanks, and the only Z. By contrast, there is great value in learning and reliably finding the word THIOUREA, which uses a very common group of letters.

For a beginning club player, the most important list to memorize is acceptable two-letter words, because these allow one to play parallel to existing words, often scoring more points than merely extending or crossing a word. After mastering the two-letter words, a beginner can greatly benefit by studying the shorter words containing high scoring tiles e.g. QI, QAT, ZEK, JEUX, as well as "hook" lists which show what letters can be added to the front and back of words and are therefore essential for forming multiple words in a turn. Another important tip for beginners is to value the esses and the blanks, which are by far the most useful for hooks and for bingos. Above a certain level of play, a good rule of thumb is that holding onto an S is worth 8–10 points, and a blank upwards of 25 points.

Esoteric words do not necessarily score more points than common words. For example **FAERIE**, depending on board placement, generally scores fewer points than **FAIRY**. The word **CWM** is quite famous for being a three-letter word with no vowels - not even a Y, which is often used as a vowel substitute - but it generally scores less than **MACAW**, for example. In this particular case, the player who plays CWM also risks overloading his rack with vowels.

Letters which are worth four or more points should be played on premium squares if possible, and letters such as X, H, and Y are powerful if they can score in both directions, for four or six times their face value. A vowel next to a double- or triple-letter score creates a *hot spot* where a valuable consonant can potentially be played for many points.

Rack management is the strategic element most overlooked by beginners. It is disadvantageous to keep duplicates of most letters or to have a large imbalance between vowels and consonants. For example, the highest scoring whole word that can be formed with the letters AADIIKR is **DARK**. However, this leaves the player with no consonants and a double I. Because vowels are more commonly represented in Scrabble, it is entirely possible that the player will enter the following turn holding the unpromising letters AIIEUAO, for example. If the player had instead played **RADII** - which scores fewer points than DARK - he or she would have been left with an A and K, a combination which is common. Experts who know all the four-letter words might also have played **KADI** or **RAKI** to good effect, leaving an R and a D respectively.

Defense is another important part of strategy. Experienced players consider how opponents could exploit their tiles and avoid creating easy setups. For instance, the word **QUIT** provides a 14 point bonus to any opponent who has the letter E (thus making **QUITE**). A seasoned player would rather put a consonant next to a bonus tile than a vowel. Players take care to place the letter U in inconvenient locations if the letter Q has not yet been played.

Because of the 50-point bonus for using all seven tiles in one turn, known as a "bingo", many players manage their racks specifically to score as many bingos as possible. Making seven- and eight-letter words is generally the fastest way to achieve a high score. The letters A, E, I, N, R, S, and T are the most useful letters for this purpose, and so a good player will be reluctant to play off these letters without some benefit in return. Conversely, good players will strive to play off undesirable tiles, at times even if that play is not the highest scoring one available, and will use a turn to exchange tiles if necessary.

A good tactic for intermediate level players is to memorize "bingo stems," or groups of six letters that combine well with almost any seventh letter to form a bingo. The best bingo stem to have is SATINE, followed by SATIRE and RETINA. With SATINE on the rack, any seventh letter except for Q or Y (or, in North America, J) will create a seven letter word (SATINE + A = **TAENIAS** or **ENTASIA**; SATINE + B = **BASINET** or **BANTIES**; SATINE + C = **CINEAST** or **ACETINS**; etc.) Since many of these seven letter words are obscure, it is useful to memorize not only the stem, but all the possible bingos that may be created with it. In order to speed up this process both for memorization and during play, some players utilize mnemonics, including a specific type known by the coined term "anamonics" (see links below).

Experts at the highest level average over two bingos a game, and four bingos by a player in a single game is not at all uncommon.

It's a good idea to manually "shuffle" your tiles as you consider possible words, as a study has proven that players who physically manipulate tiles using their hands generate more possible words than those that do not. (Source: Interactive Skill in Scrabble. Paul P. Maglio, Teenie Matlock, Dorth Raphaely, Brian Chernicky, David Kirsh. 1999.)

Computer players

Scrabble has been an object of interest for many artificial intelligence researchers and enthusiasts. As already outlined above, playing the word with the highest score is not always the best strategy, so teaching a computer to play well requires knowledge of a number of much more subtle strategies.

The game is especially interesting to implement because it can be broken down into two phases that are, from a computer's perspective, fundamentally different. The first lasts from the beginning of the game up until the last tile in the bag is drawn. During this phase, it is not known what the other players' tiles are, and the game has an element of randomness. However, when the last tile is drawn and the bag is empty, the computer can deduce from the overall letter distribution what letters must be on the other players' racks. In particular, when playing against a single opponent, the computer knows exactly the tiles on your rack and thus what your possible moves are for the rest of the game.

The best known Scrabble AI player is Maven, created by Brian Sheppard. The official Scrabble computer game in North America uses this method of artificial intelligence and is released by Atari. Outside of North America, the official Scrabble computer game is released by Mattel.

Records

The following records were achieved during competitive club or tournament play, according to authoritative sources, including the book Everything Scrabble by Joe Edley and John D. Williams, Jr. (revised edition, Pocket Books, 2001) and the Scrabble FAQ. When available, separate records are listed based upon different official word lists: 1) OSPD or OCTWL, the North American list also used in Thailand and Israel; 2) OSW, formerly the official list in the UK; and 3) SOWPODS, the combined OSPD+OSW now used in much of the world. To date, new editions or revisions of these lists have not been considered substantial enough to warrant separate record-keeping.

High game (OSPD) — 770 by Mark Landsberg (CA), 1993. Landsberg defeated Alan Stern 770-308.[1]

High game (OSW) — 793 by Peter Preston (UK), 1999.[2]

High game (SOWPODS) — 750 by Joan Rosenthal (Australia), 2002.

High combined score (OSPD) — 1111 (653-458) by Ira Cohen and Bruce D'Ambrosio, in a Los Angeles club, 2001.[3]

High combined score (SOWPODS) — 1082 by Helen Gipson and David Webb, 2000.[4]

Highest losing score (OSPD) — 539 by Joel Sherman (NY) to David Poder's (CA) 541, 2001.[5]

Highest tie game (OSPD) — 502-502 by John Chew and Zev Kaufman at a 1997 Toronto Club tournament.

Highest opening move score (OSPD) — BEZIQUE, 124 by Sam Kantimathi (CA) in Portland, OR Tournament in 1992. The highest possible legal score on a first turn is MUZJIKS, 128.

Highest single play (OSPD) BRAZIERS, 311 by T. A. Sanders (TX) 1997.

Highest single play (SOWPODS) CAZIQUES 392 Karl Khoshnaw.[6]

Highest Average Score (two-day tournament) (OSPD) — 467 by Joel Sherman (NY) over 11 rounds; Wisconsin Dells, WI 1997.

Absent better documentation, it is believed that the following records were achieved under a formerly popular British format known as the "high score rule", in which a player's tournament result is determined only by the player's own scores, and not by the differentials between that player's scores and the opponents'. As a result, play in this system "encourages elaborate setups often independently mined by the two players"[7], and is profoundly different from the true competitive game in which defensive considerations play a major role. While the "high score" rule has unsurprisingly led to impressively high records, it is currently out of favor throughout the world; associating its records with normal competitive play is extremely misleading.

- High game score of 1,049 by Phil Appleby of Lymington, Hants, UK, on June 25, 1989 in Wormley, Herts, UK. His opponent scored just 253 points, giving Appleby a record victory margin of 796 points.

- High single-turn score of 392, by Dr. Saladin Karl Khoshnaw in Manchester, UK, in April 1982. The word he used was **CAZIQUES**, meaning "native chiefs of West Indian aborigines".

Other records are available for viewing at Total Scrabble, an unofficial record book which includes the above as sources and expands on other topics.

Works detailing tournament Scrabble

An entertaining and highly informed introduction to tournament Scrabble and its players can be found in the book Word Freak by Stefan Fatsis. In the process of writing, Fatsis himself progressed into a highly-rated tournament player.

There have been numerous documentaries made about the game, including:

- *Word Wars* by Eric Chaikin and Julian Petrillo, about the "tiles and tribulations on the Scrabble game circuit".
- *Scrabylon*, by Scott Petersen which "gives an up-close look at why people get so obsessed with that seemingly benign game..."
- *Word Slingers* by Eric Siblin and Stefan Vanderland which follows four expert Canadian players at the 2001 World Championship in Las Vegas.

References in literature, television, and film

Scrabble is referenced frequently in pop culture, most likely due to its popularity, accessibility, and universal familiarity. Due to the selection of random letters under an individual's limited control, the device is often used as a method for characters to receive supernatural or occult messages, much like a Ouija board.

Spoiler warning: ***Plot and/or ending details follow.***

In Red Dwarf (BBC TV Series), episode "Bodyswap" (series 3 episode 4), Cat plays the word jozxyqk, claiming it to be a cat word meaning "the sound you get when you get your sexual organs trapped in something."

In Friends (a U.S. situation comedy), during the first season, the gang plays Scrabble. Monica tries to put down the word "tushie." Ross uses "garge" (which he claims is a nautical term), and Chandler uses Ross's argument for "garge" for a word he invented, "fligament." Later, Ross's pet monkey Marcel chokes on Scrabble tiles. Also, Chandler gives Rachel a Travel Scrabble board for her birthday.

In Will & Grace (a U.S. situation comedy), Episode 117, Jack invents the word "spramp" during a game of Scrabble and rigorously defends it against Will's challenge.

In The Handmaid's Tale (Margaret Atwood), Scrabble is used as a pretext for the commander to have non-sexual interactions with the main character, Offred, though these interactions are forbidden by the laws and customs of their dystopian society.

In Heartbreakers (from a deleted scene), Sigourney Weaver and Gene Hackman are seen playing a game of Scrabble.

In The Hitchhiker's Guide to the Galaxy (Douglas Adams), the main character, Arthur Dent, while stranded on a prehistoric planet creates a primitive set of Scrabble tiles, though he has no viable opponents with whom to play. He later attempts to use these tiles as a method of divining the Ultimate Question to The Answer to Life, the Universe, and Everything, but has debatable success.

In the novel 'Watchers', a genetically enhanced dog learns to communicate with Scrabble tiles.

In Little Britain (BBC TV Series) the character Kenny Craig hypnotises his mother to believe that "cupboardy" is a real word so that he can use it to score points in a game of Scrabble (by adding the letter Y to the existing word "cupboard").

In Rosemary's Baby (Roman Polanski), the main character Rosemary Woodhouse uses Scrabble tiles to create anagrams in an attempt to find a clue to her circumstances. After fruitlessly looking for anagram of a book title, "All Of Them Witches," she sees the name "Steven Marcato" underlined in it, and rearranges the tiles to discover it is an anagram of "Roman Castevet," her suspicious neighbor.

In Sneakers (Phil Alden Robinson and Lawrence Lasker), the main character Martin Bishop, played by Robert Redford, uses Scrabble tiles to create anagrams from "Setec Astronomy", eventually coming across "Too Many Secrets", which refers to the hidden function of the black box he and his team acquired from a mathematical genius' laboratory.

In The Simpsons episode "Bart the Genius", Bart puts down the phony word "Kwyjibo" worth 150 points. Homer challenges the word and Bart defines it as "A big, dumb, balding North American ape... with no chin."

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Casino Games

Games available in most casinos are commonly called **casino games**. A casino game typically provides a predictable long-term advantage to the house while offering the player the possibility of a large short-term payout.

Casino games often offer the player the illusion of control in which the player is given choices, but the choices do not eliminate the player's long-term disadvantage (the **house advantage**). This disadvantage is caused by the casino not paying the full amount that would be expected for the odds wagered. For example, if one game was played by betting what number a roll of a die would give, instead of paying 6 times the amount bet for winning (because it's a 1 in 6 chance) the casino only pays 5 times the amount bet.

A list of some casino games is given below.

Asian stud
Baccarat
Bingo
Blackjack
Caribbean Stud Poker
Chinese poker
Chuck-a-luck
Craps
Faro
Four card poker
Keno
Let it ride
Mambo stud
Pai gow
Pai gow poker
Poker
Red dog
Roulette

Sic bo
Slot machine
Three card poker
Two-up
Video poker

Many casino games are also available outside casinos, playable on machines which simulate them.

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Casino

A **casino** is a building that accommodates certain types of gambling games and activities. Customers may gamble by playing slot machines or other games of chance and some skill (e.g., craps, roulette—for more see casino games). Game rules usually have mathematically-determined odds that ensure the house retains an advantage over the players. This advantage is called the *edge*. *Payout* is the percentage given to players. In games such as poker, the house takes a commission (a "rake") on bets players make against each other. Casinos are often placed near or combined with hotels, restaurants and other vacation attractions to encourage long stays.

The term originally meant a small villa, summerhouse or pavilion built for pleasure, usually on the grounds of a larger Italian villa or palazzo. There are examples of such casinos at Villa Giulia and Villa Farnese. During the 19th century, the term casino came to include other more public buildings where pleasurable activities, including gambling and sports, took place. An example of this type of building is the Newport Casino. Eventually this term in Italian now designates a bordello (also called "casa chiusa" literally "closed house"), while the gambling house is spelled *casinò* with an accent.

See also

- Online casino
- Casino game

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Online Casino

Online casinos, also known as **virtual casinos**, are the online version of land-based ("brick and mortar") casinos. They allow you to play casino games through the Internet. Some online casinos provide various games, while others only provide only one type of game. Online poker is also very popular and there are many dedicated companies that provide this activity.

Online casinos can for certain games offer better odds than land casinos on slots and other formats where the chance of winning is determined by the house. Table games like blackjack have an established house edge; for a given set of rules, they offer the same payout, online or offline. Reliability and trust are hard to establish. To solve this issue, many online casinos purchase their software from well-known companies such as Wager Works, Microgaming, Playtech and Cryptologic, though a little research into credentials of any e-commerce site you plan to use is common sense. These software companies use a random number generator to ensure that the numbers, cards or dice appear randomly. All reputable companies operating in a regulated environment use robust random number generators.

Casino types

Online casinos can be divided into two groups based on their interface: web-based casinos and download-based casinos. Some casinos offer more than one interface.

Web-based online casinos

Web-based online casinos are websites where users may directly play casino games without loading any software to the local computer. Games are mainly represented in the browser plugins Macromedia Flash, Macromedia Shockwave, or Java and require browser support for mentioned plugins. Also, bandwidth is needed since all graphics, sounds and animations are loaded through the web via the plugin. A very small number of casinos allow games played through a plain HTML interface.

Download-based online casinos

Download-based online casinos are the most common casino web sites. On these websites, users have to download certain software to play casino games. After installing the software, it connects to the casino service provider and handles contact without browser support.

An advantage of these compared to web-based online casinos is speed, since it does not need to load graphics from the Internet because all multimedia is inside the downloaded software. On the downside, there is an initial download and the need for the installation of the program, and the risk of the program containing malware (though this is very uncommon).

Games offered

A typical selection of games on offer at an online casino might include: blackjack, roulette, baccarat, craps, pai gow poker, video poker, and slot machines.

See also casino game.

Bonuses

Many online casinos offer large bonuses, often a "100% match bonus". For example, common terms and conditions for a bonus might be:

- 100% up to $100
- Must wager 25 times the deposit and bonus before withdrawing
- Wagers on baccarat, craps, roulette, and sic bo do not count towards meeting wagering requirements

For this particular example, this would mean that a player depositing $100 would start with $200 in his account. He must make $5000 ($200 × 25) in wagers before withdrawing. This can be played at a game such as blackjack.

Some simple arithmetic shows that if the player leaves after meeting the requirements, he has a very large edge. For example, the house edge in blackjack is around or less than 0.5% at most online casinos. $5000 × 0.005 = $25. Therefore, the player expects to show a $25 loss — however, he was given a $100 bonus. Therefore, the player's expected profit is $75, a massive 75% advantage. Usually, taking advantage of such a promotion is the only way to gain an edge over the casino.

This has often led to players playing at casinos to take the bonus, and leaving after the wagering requirements are met. These players are called by (and have adopted with pride) a variety of labels such as "advantage players", "bonus hunters", "bonus abusers", and, perhaps the most vulgar, "bonus whores". Strictly speaking, this behavior is usually prohibited by the casino, because their terms usually dictate that players may play for recreational purposes only. In practice, players are rarely caught doing this, and usually when they are they simply have their promotion privileges revoked.

A player who wishes to do this at a large number of online casinos must be careful. Some casinos are rogues (see below) and do not pay. Others have terms and conditions that are not favorable to the player, such as most bonuses that are restricted to slots.

Rogues

Occasionally a **rogue casino** will be discovered. There are two ways a casino might misbehave: refusing to pay customers or cheating software.

Cheating software appears to be extremely rare. There are some casinos that have been mathematically proven to cheat, such as Casino Bar (evidence by Michael Shackleford and others). Some players often accuse certain popular software brands of casinos of cheating, for example Boss Media, Cryptologic, and Playtech, but they are likely "finding" patterns that are not actually there, as tests for cheating at these casinos has never turned up positive. This does not mean that all software providers are honest (for example, Elka System/Oyster Gaming software is known to cheat, also confirmed by Michael Shackleford), but the most popular software is more likely than not.

Player fraud

Although there is the occasional rogue casino, sometimes it's the players who are deceitful or irresponsible. One of the most common cases is a player who signs up for multiple accounts at a casino using fake names to reap the bonus more than once. Another player might use Adobe Photoshop or a similar tool to manipulate the graphics of a slot machine screenshot to try to fool the casino into believing she hit a jackpot and didn't get paid for it. These are invariably gross violations of the terms of service of the casino and usually are frowned upon, even by many "bonus hunters". Casinos do not tolerate such behavior and will usually lock the account or accounts of the player responsible, and may inform other casinos and/or the software provider to keep the player out of other casinos.

See also

- Casinos
- Gambling

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Lottery

A **lottery** is a popular form of gambling which involves the drawing of lots for a prize. Some governments forbid it, while others endorse it to the extent of organizing a national lottery.

Countries with a national lottery

Argentina: Quiniela, Loto and various others.
Austria: Lotto 6 aus 45 and Zahlenlotto
Australia: Australian Lottery Games, Powerball
Belgium: Loterie Nationale or Nationale Loterij
Brazil: Mega-Sena and various others
Canada: Lotto 6/49 and Super 7
Croatia: Hrvatska lutrija
Dominican Republic: leidas,s.a.
Denmark: Lotto
Finland: Lotto
France: La Française des Jeux
Germany: Lotto 6 aus 49 and Spiel 77 and Super 6
Hong Kong: Mark Six
Hungary: Lottó
Ireland: The National Lottery
Israel: "lotto", "pais"
Italy: Lotto, Superenalotto
Japan: Takarakuji
Mexico: Lotería Nacional para la Asistencia Pública
Netherlands: Staatsloterij
New Zealand: Lotto
Norway: Lotto
Philippines: Philippine Lotto 6/42
Poland: Lotto
Portugal: Lotaria Clássica and Lotaria Popular
Puerto Rico: Lotería Tradicional & Lotería Electrónica
Romania: Loteria Romana - 6/49, 5/40, Pronosport
Russia: Sportloto
Serbia and Montenegro: Narodna Lutrija

Singapore: TOTO
South Africa: South African National Lottery
South Korea: Lotto
Spain: Loterías y Apuestas del Estado
United Kingdom: formerly The National Lottery, now Lotto

Lotteries come in many formats. The prize can be fixed cash or goods. In this format there is risk to the organizer if insufficient tickets are sold. The prize can be a fixed percentage of the receipts. A popular form of this is the "50-50" draw where the organizers promise that the prize will be 50% of the revenue. The prize may be guaranteed to be unique where each ticket sold has a unique number. Many recent lotteries allow purchasers to select the numbers on the lottery ticket resulting in the possibility of multiple winners.

Lotteries are most often run by governments or local states and are sometimes described as a regressive tax, since those most likely to buy tickets will typically be the less affluent members of a society. The astronomically high odds against winning have also led to the epithet of a "tax on stupidity". The phrase is largely rhetorical (playing the lottery is voluntary; taxes are not), but it is intended to suggest that lotteries are governmental revenue-raising mechanisms that will attract only those consumers who fail to see that the game is a very bad deal. Indeed, the desire of lottery operators to guarantee themselves a profit requires that a lottery ticket be worth substantially less than what it costs to buy. After taking into account the present value of the lottery prize as a single lump sum cash payment, the impact of any taxes that might apply, and the likelihood of having to share the prize with other winners, it is not uncommon to find that a ticket for a typical major lottery is worth less than one third of its purchase price.

The fact that lotteries are commonly played leads to some contradictions against standard models economic rationality. However, the goal of some players may not be to win the game, but merely to have a thrill and indulge in a fantasy of possibly becoming wealthy. This is particularly popular among those who believe their chances of becoming rich are already zero, so even if the lottery's odds are awful, they are better than zero.

Lottery in the United States

In the United States, the existence of lotteries is subject to the laws of each state; there is no national lottery. Before the advent of state-sponsored lotteries, many illegal lotteries thrived; for example, see Numbers game and Peter H. Matthews. The first state lottery in the U.S. was established in the state of New Hampshire in 1964; today, lotteries are established in forty-one states and the District of Columbia. On October 8, 1970, New York held the first million dollar lottery drawing.

The first modern interstate lottery in the U.S. was Tri-State Lotto. Tri-State Lotto was formed in 1985 and linked the states of Maine, New Hampshire and Vermont. In 1988, the Multi-State Lottery Association was formed with Oregon, Iowa, Kansas, Rhode Island, West Virginia and the District of Columbia as its charter members; it is best known for its "Powerball" drawing, which is designed to build up very large jackpots. Another interstate lottery, The Big Game (now called Mega Millions), was formed in 1996 by the states of Georgia, Illinois, Massachusetts, Maryland, Michigan and Virginia as its charter members.

Other interstate lotteries include: Hot Lotto, Lotto South, and Wild Card 2. *For more detailed information on U.S. lotteries*.

With the advent of the Internet it became possible for people to play on-line, many times for free (the cost of the ticket being supplemented by merely seeing, say, a pop-up ad). Slight wanings in the overall number of people playing by "traditional" ways (paper ticket, $1 per chance) caused several states to combine into multi-state pools of much larger winning amounts. Some of the many websites which offer free games (after registration) include www.iwinweekly.com and the larger iwon.com, which is backed by the CBS broadcasting corporation. GTech Corporation, in the United States, administrates 70% of the worldwide online and instant lottery business, according to its website.

See also: Keno

Lottery in Canada

The first lottery in Canada was Quebec's Inter-Loto in 1970. Other provinces and regions introduced their own lotteries through the 1970s, and the federal government ran Loto Canada (originally the Olympic Lottery) for several years starting in the late 1970s to help recoup the expenses of the 1976 Summer Olympics.

Today, Canada has two nation-wide lotteries: Lotto 6/49 (which started in 1982), and Lotto Super 7 (which started in 1994). These games are administered by the Interprovincial Lottery Corporation, which is a consortium of the five regional lottery commissions, all of which are owned by their respective provincial and territorial governments:

Atlantic Lottery Corporation (New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador)
Loto-Québec (Quebec)

Ontario Lottery and Gaming Corporation (Ontario)
Western Canada Lottery Corporation (Manitoba, Saskatchewan, Alberta, Yukon Territory, Northwest Territories, Nunavut)
British Columbia Lottery Corporation (British Columbia)

All five regional corporations offer additional regional lotteries that are played only in their respective regions.

Lottery in France

The first known lottery in France was created by King Francis I in or around 1505. After that first attempt, lotteries were forbidden for two centuries.

They reappeared at the end of 17th century, as a "public lottery" for the Paris municipality (called *Loterie de L'Hotel de Ville*) and as "private" ones for religious orders (mostly for nuns in convents).

Lotteries became quickly one of the most important resources for religious congregations in the 18th century.

Lotteries helped to build or rebuild many churches (about 15 including the biggest ones) in Paris during the 18th century, including St Sulpice and Le Panthéon.

At the beginning of the century, the King avoided having to fund religious orders by giving them the right to run lotteries, but the amounts generated became so large that the second part of the century turned into a struggle between the monarchy and the Church for control of the lotteries. In 1774, the Loterie de L'École Militaire was founded by the monarchy (by Mme de Pompadour to be precise, to buy what is called today the Champ de Mars in Paris, and build a Military Academy that Napoleon Bonaparte would later attend) and all other lotteries, with 3 or 4 minor exceptions, were forbidden.

This lottery became known a few years later as the *Loterie Royale de France*. Just before the French Revolution (1789) the revenues from La Lotterie Royale de France were equivalent to between 5 and 7% of total French revenues.

Throughout the 18th century, philosophers like Voltaire as well as some bishops complained that lotteries exploit the poor. This subject has generated much oral and written debate over the morality of the lottery.

All lotteries (including state lotteries) were frowned upon by idealists of the French Revolution, who viewed them as a method used by the rich for cheating the poor out of their wages.

The Lottery reappeared in France in 1936, called loto, when socialists needed to increase state revenue. Since that time, *La Française des Jeux* (government owned) has had a monopoly on most of the games in France, including the lotteries.

Probability of winning

The chances of winning a lottery jackpot are principally determined by several factors: the count of possible numbers, the count of winning numbers drawn, whether or not order is significant and whether drawn numbers are returned for the possibility of further drawing.

In a typical 6 from 49 lotto, 6 numbers are drawn from 49 and if the 6 numbers on a ticket match the numbers drawn, the ticket holder is a jackpot winner - this is true regardless of the order in which the numbers are drawn. The odds of being a jackpot winner are approximately 1 in 14 million (13,983,816 to be exact). The derivation of this result is a simple exercise in combinatorics.

To put these odds in context, suppose one buys one lottery ticket per week. 13,983,816 weeks is roughly 269,000 years; In the quarter-million years of play, one would only expect to win the jackpot once.

The odds of winning any actual lottery can vary widely depending lottery design. "Powerball" is a very popular multistate lottery in the United States which is known for jackpots that grow very large from time to time. This attractive feature is made possible simply by designing the game to be extremely difficult to win: 1 chance in 120,526,770. That's almost nine times **smaller** than the example above. Powerball players also pick six numbers, but two different "bags" are used. The first five numbers come from one bag that contains numbers from 1 to 53. The sixth number -- the "Powerball number" -- comes from the second bag, which contains numbers from 1 to 42. To win a powerball jackpot, a player's five regular numbers must match the five regular numbers drawn **and** the Powerball number must match the Powerball number drawn. In other words, it is not good enough to pick 10, 18, 25, 33, 42, 7 when the drawing is 7, 10, 25, 33, 42, 18. Even though the player picked all the right numbers, the Powerball number at the end of the ticket doesn't match the one drawn, so the ticket would be credited with matching only four numbers (10, 25, 33, 42).

Most lotteries give lesser prizes for matching just some of the winning numbers. The Powerball game described above is an extreme case, giving a very small payout (US$3) even if a player matches only the Powerball number at the end of your ticket. Matching more numbers, the payout goes up. Although none of these additional prizes affect the chances of winning the jackpot, they do improve the odds of winning something and therefore add a little to the value of the ticket.

Payment of prizes

The payment of a lotto prizes is not always a lumpsum amount. In countries like USA the winner gets to choose from either an annuity payment or a one time payment. The one time payment is often about half of the advertised lotto jackpot, with much of the prize subject to a withholding tax. The annuity payment makes regular payments for periods from 10 to 40 years.

In some online lottos the yearly payments can be as low as $25,000 for 40 years with a balloon payment on the final year. This type of installment payment is often made through investment in government-backed securities. Online lottos payout the winners through their insurance backup. However a majority of winners choose to take the lumpsum payment as they believe they can get a better rate of return on their investment elsewhere.

In some countries lottery winnings are not subject to personal income tax, thus there are no tax consequences in terms of how the prize is payed out. In Canada, all prizes are immediately paid out as one lump sum, tax-free to the winner.

Scams and Frauds

Lottery like any mechanism is susceptible to fraud despite the high degree to scrutiny offered by the organisers. One method involved is to tamper the machine used for the number selection. By rigging a machine it is theoretically easy to win a lottery. This act is often done in connivance with an employee of the lottery firm. Methods used vary; loaded balls where select balls are made to popup making it either lighter or heavier than the rest. Many other ingenious methods too have been employed.

Some scams on the internet too are based on lotteries. The modus operandi of this fraud is the trickster sends spam to all email users in their database congratulating them on their recent lottery win. Then they proceed to announce that in order to release funds they must part with a certain amount (as tax/fees) as per the rules or risk forfeiture. Some unsuspecting users might fall prey to this scandal and part with their money falling into their trap, where they continue to pay as they are misled by the scamsters who dupe their clients into believing that they are always one step closer to the money. The swindlers also might use telephone or printed letters to approach victims to execute their plan more professionally.

See also

Bingo

Bingo is a game of chance where randomly-selected numbers are drawn and players match those numbers to those appearing on 5x5 matrices which are printed or electronically represented and are known as "cards." The first person to have a card where the drawn numbers form a specified pattern is the winner and calls out "Bingo!" to alert others to the win. Bingo is a game used for legalized gambling in some countries.

In New Zealand, Australia, and Britain, a very similar game called housie is played, which differs only in ticket layout and calling.

Description of the game

Each bingo player is given a card marked with a grid containing a unique combination of numbers and, in some countries, blank spaces. The winning pattern to be formed on the card is announced. On each turn, a non-player known as the *caller* randomly selects a numbered ball from a container and announces the number to all the players. The ball is then set aside so that it cannot be chosen again. Each player searches his card for the called number, and if he finds it, marks it. The element of skill in the game is the ability to search one's card for the called number in the short time before the next number is called.

The caller continues to select and announce numbers until the first player forms the agreed pattern (one line, two lines, full house) on their card and shouts out the name of the pattern or *bingo*. One of the most common patterns, called *full card*, *blackout* and *cover-all* simply consists of marking all the numbers on the card. Other common Canadian and American patterns are single line, two lines, centre cross, L, Y, inner square (4 × 4), roving square (3 × 3), and roving kite (a 3 × 3 diamond). On Canadian and American cards lines can be made horizontally, vertically, or diagonally. Inner and roving squares and kites must be completely filled; roving squares and kites may be made anywhere on the card.

Bingo Cards

Canadian and American bingo cards are 5 × 5 grids of numbers only; *dual daub*, *dual dab*, or "double-action" cards have two numbers in each square. Each space in the grid contains a number, except for the centre square, which is considered filled. The highest number used is 75. The columns are headed with the letters of the word BINGO, and the letter is called with the number — for example, B-10, I-25, N-40, G-55, O-70. Numbers 1 to 15 are assigned to the *B* column, 16 to 30 to the *I* column, 31 to 45 to the *N* column, 46 to 60 to the *G* column, and 61 to 75 to the *O* column.

Each card has a unique serial number to permit quick verification by computer.

Culture

Canadian and American games often have multiple bingos — for example, the players may first play for a single line, then after that is called continue playing for a full card, then for a consolation full card.

In Canadian and American Halls, players often play multiple cards for each game; thirty is not an unusual number. Because of the large numbers of cards played by each player, most Canadian and American halls have the players sit at tables to which they often fasten their cards with adhesive tape. To mark cards faster the players usually use special markers called *dabbers*. At commercial halls, after calling the number the caller then displays the next number on a television monitor; bingo cannot be called until that number is called aloud, however. The numbers already called and the patterns being played are also displayed on electric signs.

In American primary schools, bingo is used to teach students. The numbers are replaced with letters, pictures, words or symbols that represent important concepts.

History

Bingo can be traced back to a game called Lotto, played in Italy in 1530. The bingo name comes from a corruption of the name Beano, the name of a form of bingo played in the United States in the 1920s. Beano was so called because beans were used to cover the numbers.

The business of bingo

In the US, the game is primarily staged by churches or charity organizations. Their legality and stakes vary by state regulation. In some states, bingo halls are rented out to sponsoring organizations, and such halls often run games almost every day. Church-run games, however, are normally weekly affairs held on the church premises. These games are usually played for modest stakes, although the final game of a session is frequently a *coverall* game that offers a larger jackpot prize for winning within a certain quantity of numbers called; a *progressive* jackpot may increase per session until it is won.

Commercial bingo games in the US are primarily offered by casinos (and then only in the state of Nevada), and by Native American bingo halls. In Nevada, bingo is usually offered only by casinos that cater to local gamblers, and not the famous tourist resorts. They will usually offer several two-hour sessions daily, with relatively modest stakes except for coverall jackpots. Station Casinos, a chain of locals-oriented casinos in Las Vegas, offers a special game each session that ties all of its properties together with a large progressive jackpot. Native American games are typically offered for only one or two sessions a day, and are often played for higher stakes than charity games in order to draw players from distant places. Some also offer a special progressive jackpot game that may tie together players from multiple bingo halls.

As well as bingo played "in house", the larger commercial operators play some games linked by telephone across several, perhaps dozens, of their clubs. This increases the prize money, but greatly reduces the chance of winning due to the much greater number of players.

Caller slang (UK Housie)

Although these numbers are amusing and each has its own story, most professional bingo halls do not use them. If a caller were busy saying "two little ducks", and the number 22 has not yet been said, it is therefore not deemed "called". In an instance where a player may have missed his or her number, and a player is waiting for 22, both players would have valid argument that their number was "called".

There are traditional calls for the numbers. For example:

Number Slang Expression

1 Kelly's Eye / On it's Own

5 Man Alive

7 Lucky for Some

8 One Fat Lady / The Garden Gate

9 Doctor's Orders

10 (current) PM's Den

11 (Chicken) Legs OR Legs Eleven

13 Unlucky for Some OR Lucky for Some

16 Sweet Sixteen

21 Key of the Door

22 Two Little Ducks

23 Thee and Me

24 Two Dozen

30 Dirty Gertie

37 More Than Eleven

44 Droopy Drawers / All the fours

45 Halfway There

50 Bulls eye / Blind 50

51 Tweak of the Thumb

55 Snakes Alive / All the Fives

57 Heinz Varieties

59 Brighton Line

64 Red Raw

66 Clickety-Click

71 Bang on the Drum

76 7 and 6 - Was she worth it? OR Trombones

79 One More Time

81 Stop and Run

86 Between the Sticks

88 Two Fat Ladies

90 Top of the Shop

Trivia

- An average British game of bingo takes between four and four and a half minutes.
- The average speed of a British bingo caller is 23 numbers per minute.
- The average time to check a winning claim is 30 seconds.
- There is a UK Caller of the Year Competition in which bingo callers compete for a cash prize and the chance to call the numbers in Las Vegas, as well as to become the bingo 'ambassador' for Britain.

Alternate variations

Two notable modern variations of bingo have achieved some kind of status in American culture:

- Buzzword bingo (also called *bullshit bingo*)
- Bovine bingo

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Keno

Keno is a popular gambling game in the United States. Its history can be traced to a Chinese game called "The Game of the White Dove (}?h)" invented during the Han Dynasty (187 BC). The name "keno" descends from a form of Bingo or Lotto popular in the USA in the 19th century. There are many references to "Keno" played in a bingo like format in the eastern states prior to the influx of Chinese during the gold rush. The name appears to have been transferred to the similar format Chinese lottery in the late 1800s.

History

The following account of the history of the game is an excerpt from Stewart Culin's paper published in 1891.

This game is an old establishment, and was first introduced by Chéung léung of the great Han Dynasty. When the city was hard pressed, and provisions were beginning to fail, they (the besieged) were anxious to increase the contributions, and to exhort the people to subscribe more for the army, but were unable to do so. Hence they established a game of chance (to guess characters), by which they hoped to tempt the people to hazard their property. In order to fix a method of losing or gaining at hazard, they chose 120 characters for the whole game and eight characters for one subdivision. If the people lost one (whole) subdivision they lost three lí of property; if they gained one division they were rewarded with ten taels. These regulations being once established, who would not sacrifice a little in order to gain much? The two games in the morning and evening were attended by men and women who tried their luck by guessing. They had only opened the game for about ten days, when they had accumulated more than 1000 pieces of silver; and after a few more decades their wealth was boundless. The money thus gained was considered a contribution to the army for the reduction of the empire....

At present the people practice the game as a profession. They borrow the characters from the Thousand Character Classic, of which eighty are chosen and arranged after a new plan, ten characters forming one division, which the people are permitted to purchase for more or less (for whatever they please.)

Three cash gaining ten taels makes the people covet the game without loathing. When they guess five characters they gain five lí; when six characters they gain five candareens; when seven characters they gain five mace; when eight characters they gain two taels and five mace; when nine characters they gain five taels; when ten characters they gain ten taels.

When this game was first established, the houses were often at a great distance, and communication being difficult and the people anxious soon to know the result respecting their gaining or losing, they employed letter doves to carry the news to the parties, whence the present designation: 'The Game of the White Dove.'

Modern keno

Keno, in its modern form, is like a lottery or bingo in that it is a numbers game. Unlike bingo, the keno player picks the numbers for his or her ticket(s). Keno cards have 80 numbers; the keno player can pick as many (or as few) numbers as desired. This is done by circling or otherwise marking them with a pencil. Once the player has picked his numbers, he must bring his card back to the clerk at the keno booth. The clerk will then issue a receipt after recording the player's numbers.

After picking numbers and recording them at the keno booth, the player will then watch either a "big board" in which winning keno numbers will light up or on a video monitor showing the selected numbers. As the winning numbers light up, the player usually marks them on his or her card with a bright-colored marker. The amount of numbers the player originally picked that match winning numbers of a particular drawing will determine if any money is won and, if so, how much. The winning ticket needs to be taken to the keno booth immediately if it is an individual game ticket, as drawings usually take place every five minutes. If the player tries to redeem a winning ticket when the next drawing starts, it is void and no money is paid out.

To avoid having a void ticket, a keno player can purchase a "multi-race" ticket with the same picked numbers on anywhere from 2 to 20 tickets. When the maximum number of games (matching the number of tickets) is finished, the player can then redeem any winnings and avoid the peril of a void ticket. Another option is the "stray and play" ticket, which is usually a number of games greater than 30. Unlike standard keno tickets, the "stray and play" doesn't have to be redeemed immediately and is often good for up to a year after purchase.

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Slot Machines

A **slot machine** (American English), **poker machine** (Australian English), or **fruit machine** (British English) is a certain type of casino game. Classically, a slot machine is a coin-operated machine with three or more reels that rotate when a lever on the side of the machine is pulled. The machines include a currency detector that validates the coin or money inserted to play. (The slot machine is also known informally as a **one-armed bandit** because of its appearance.) The machine typically pays off based on patterns of symbols visible on the front of the machine when it stops. Modern computer technology has resulted in many variations on the slot machine concept. Today, slot machines have become one of the most popular attractions in casinos.

History

The first gambling machine was developed by Sittman and Pitt of Brooklyn in 1891. It contained 5 drums holding a total of 50 card faces and was based on poker. They proved extremely popular and soon there was hardly a bar in the city that didn't have one or more of the machines bar-side. Players would insert a nickel and press a lever which would spin the drums and the cards they held, the player hoping for a good poker hand. There was no direct payout mechanism, so a pair of Kings might get you a free beer, whereas a Royal Flush could payout cigars or drinks, the prizes wholly dependant on what was on offer at the local establishment. In order to make the odds better for the house, two cards were typically removed from the "deck": the Ten of Spades and the Jack of Hearts, which cut the odds of winning a Royal Flush by half. The drums could also be re-arranged to further reduce a player's chance of winning.

The first "one-armed bandit" was invented in 1895 by Charles Fey of San Francisco, California, who devised a much simpler automatic mechanism. Due to the vast number of possible wins with the original poker card-based game, it proved practically impossible to come up with a way to make a machine capable of making an automatic pay-out for all possible winning combinations. Charles Fey devised a machine with three spinning reels containing a total of five symbols – horseshoes, diamonds, spades, hearts and a Liberty Bell, which also gave the machine its name. By replacing ten cards with five symbols and using three reels instead of five drums, the complexity of reading a win was considerably reduced, allowing Fey to devise an effective automatic payout mechanism. Three bells in a row produced the biggest payoff, ten nickels. *Liberty Bell* was a huge success and spawned a thriving mechanical gaming device industry. Even when the use of these gambling devices was banned in his home State after a few years, Fey still couldn't keep up with demand for the game elsewhere.

Another early machine gave out winning in the form of fruit flavoured chewing gums with pictures of the flavours as symbols on the reels. The popular cherry and melon symbols derive from this machine. The "BAR" symbol now common in slot machines was derived from an early logo of the Bell-Fruit Gum Company. In 1964, Bally developed the first fully electromechanical slot machine called *Money Honey*.

Description

A person playing a slot machine purchases the right to play by inserting coins, cash, or in newer machines, a bar-coded paper ticket (known as "ticket in/ticket out" machines), into a designated slot on the machine. The machine is then activated by means of a lever or button, or on newer machines, by pressing a touchscreen on its face. The game itself may or may not involve skill on the player's part — or it may create the illusion of involving skill without actually being anything else than a game of chance. The object of the game is to win money from the machine. The game usually involves matching symbols, either on mechanical reels which spin and stop to reveal one or several symbols, or on a video screen. The symbols are usually brightly colored and easily recognizable, such as images of fruits, and simple shapes such as bells, diamonds, or hearts.

Most games have a variety of winning combinations of symbols, often posted on the face of the machine. If a player matches a combination according to the rules of the game, the slot machine pays the player cash or some other sort of value, such as extra games.

There are many different kinds of gambling slot machines in places such as Las Vegas. Some of the most popular are the video poker machines, in which players hope to obtain a set of symbols corresponding to a winning poker hand. There are standard 5-card draw machines, all the way up to 100-play machines, where you can play 100 hands at a time.

Becoming more popular now are the 9 line slots. Usually these are themed slots (Addams Family, I Dream of Jeannie, etc.) with a bonus round. Most accept variable amounts of credit to play with 1 to 5 credits per line being typical. The higher the amount bet, the higher the payout will be.

Of course, there are the standard 3 - 5 reel slot machines, of various types. These are the typical "one-armed bandits".

One of the main differences between video slots and reel slots is in the way payouts are calculated. With reel slots, the only way to win the maximum jackpot is to play the maximum number of coins (usually 3, sometimes 4, or even 5 coins per spin). With video slots, the fixed payout values are multiplied by the number of coins per line that are being bet. In other words: on a reel slot, it is to the player's advantage to play with the maximum number of coins available. On video slots, it is recommended to play as many individual lines as possible, but there is no benefit to the player in betting more than one credit per line with regards to calculating the payout amounts. (There are some isolated cases where a video slot machine requires the maximum number of credits per spin to be inserted to win the largest payout, but those are the exception.) *An example: On the* "Wheel of Fortune" *reel slot, the player must play 3 coins per spin to be eligible to trigger the bonus round and possibly win the jackpot. On the Wheel of Fortune video slot, the chances of triggering the bonus round or winning the maximum jackpot are exactly the same regardless of the number of coins bet on each line.*

Larger casinos offer slot machines with denominations from $.01 (penny slots) all the way up to $100.00 or more per credit. Large denomination slot machines are usually cordoned off from the rest of the casino into a "High Limit" area, often with a separate team of hosts to cater to the needs of the high-rollers who play there.

Slot machines common in casinos at this time are more complicated. Most allow players to accept their winnings as credits which may be "spent" on additional spins.

In the last few years, new slot machines commonly known as "multi-denomination" have been introduced. In a multi-denomination slot machine, the player can choose the value of each credit wagered from a list of options. Based upon the player's selection, the slot machine automatically calculates the number of credits the player receives in exchange for the cash inserted and displays the amount of available credits to the player. (For example, a player could choose to wager one dollar per game on a nickel slot machine.) This eliminates the need for a player to find a specific denomination of a particular slot machine; they can concentrate on simply finding the machine and setting the denomination once they decide to play.

Recently, some casinos have chosen to take advantage of a concept commonly known as "tokenization": 1 token buys more than one credit. A casino can congifure slot machines of numerous different denominations to accept the same type of token. (For example, all penny, nickel, quarter, and dollar slot machines could be configured to accept dollar tokens.) This significantly reduces a casino's inventory costs and coin handling costs. A tokenized slot machine automatically calculates the number of credits the player receives in exchange for the token inserted and displays the amount of available credits to the player. When a player chooses to collect his credits (by pressing a "Cash Out" button), the slot machine will automatically divide the number of credits on the credit meter by the value of one token and return the result to the patron. Any remainder is known as "residual credits" and cannot be collected. Residual credits must be either played or abandoned.

Terminology

A **coin hopper** is a container where the coins that are immediately available for payouts are held. The hopper is a mechanical device that rotates coins into the coin tray when a player collects his credits/coins (by pressing a "Cash Out" button). When a certain preset coin capacity is reached, a coin diverter automatically redirects, or "drops", excess coin into a "drop bucket" or "drop box".

A **drop bucket** or **drop box** is a container located in a slot machine's base where excess coins are diverted from the hopper. Typically, a drop bucket is used for low denomination slot machines and a drop box is used for high denomination slot machines. A drop box contains a hinged lid with one or more locks whereas a drop bucket does not contain a lid. The contents of drop buckets and drop boxes are collected and counted by the casino on a scheduled basis.

Shortpay refers to a payout made by a slot machine, less than the amount indicated by the payout schedule. Occurs when the coin hopper becomes depleted during a payout and the remaining amount is paid to the player by a hand pay.

Hand Pay is when the slot attendant or cage gives the player a cash payout, rather than the actual slot machine paying out from the coin hopper. A hand pay may be automatically requested by the slot machine if the total credits on the machine is greater than a certain number of coins (typically 1,000).

A **hopper fill slip** is a document used to record the replenishments of the coin in the coin hopper which are required as a result of payouts to players. The slip indicates the amount of coin placed into the hoppers, as well as the signatures of the employees involved in the transaction, the slot machine number and the location and the date.

Weight count is an American casino term, refering to the dollar amount of coins or tokens removed from a slot machine's drop bucket or drop box and counted by the caino's hard count team through the use of a weigh scale.

Optimal play is a payback percentage based on a gambler using the optimal strategy in a skill-based slot machine game.

The **Theoretical Hold Worksheet** is a worksheet provided by the manufacturer for all slot machines which indicates the theoretical percentage that the slot machine should hold based on adequate levels of coin-in. The worksheet also indicates the reel strip settings, number of coins that may be played, the payout schedule, the number of reels and other information descriptive of the particular type of slot machine.

Pay Table

Each machine has a table that lists the number of credits the player will receive if the symbols listed on the pay table line up on the pay line of the machine. Some symbols are wild and will pay if they are visible in any position, even if they are not on the pay line. Especially on older machines, the pay table is listed on the face of the machine, usually above and below the area containing the wheels. Most video machines display the pay table when the player presses a "pay table" button or touches "pay table" on the screen; some have the pay table listed on the cabinet as well.

Technology

It is a common belief that the odds on a machine have something to do with the number of each kind of symbol on each reel, but in modern slot machines this is no longer the case. Modern slot machines are computerized, so that the odds are whatever they are programmed to be. For instance, if the jackpot combination is "7-7-7", slot machine owners can fool/tease people by making "7-7-(non-7)" come up frequently. In modern slot machines, the reels and lever are present for historical and entertainment reasons only. The positions the reels will come to rest on are chosen by a Random Number Generator contained in the machine's software as soon as the lever is pulled or the "Play" button is pressed.

Slot machines are typically programmed to pay out as winnings between 82 to 98 percent of the money that is wagered by players. This is known as the "theoretical payout percentage". The minimum theoretical payout percentage varies among jurisdictions and is typically established by law or regulation. For example, the minimum payout percentage in Nevada is 75 percent and in New Jersey is 83 percent. The winning patterns on slot machines, the amounts they pay, and the frequency at which they appear are carefully selected to yield a certain percentage of the cost of play to the "house" (the operator of the slot machine), while returning the rest to the player during play. Suppose that a certain slot machine costs $1 per spin. It can be calculated that over a sufficiently long period, such as 1,000,000 spins, that the machine will return an average of $950,000 to its players, who have inserted $1,000,000 during that time. In this (simplified) example, the slot machine is said to pay out 95%. The operator keeps the remaining $50,000.

A slot machine's theoretical payout percentage is set at the factory when the software is written. Changing the payout percentages after a slot machine has been placed on the gaming floor requires a physical swap of the software which is usually stored on an EPROM but may be downloaded to Non-Volatile Random Access Memory (NVRAM) or even stored on CD-ROM or DVD depending on the technological capabilities of the machine and the regulations of the jurisdiction. Based on current technology, this is a time consuming process and as such is done infrequently. In certain jurisdictions, such as New Jersey, the EPROM is sealed with a tamper-evident seal and can only be changed in the presence of the state Gaming Control Board. Other jurisdictions, including Nevada, randomly audit slot machines to ensure that they contain only approved software.

Often machines are linked together in a way that allows a group of machines to offer a particularly large prize, or "jackpot". Each slot machine in the group contributes a small amount to this progressive jackpot, which is awarded to a player who gets (for example) a royal flush on a video poker machine, or a specific combination of symbols on a regular or 9 line slot machine. The amount paid for the progressive jackpot is usually far higher than any single slot machine could pay on its own.

In some cases multiple machines are linked across multiple casinos. In these cases, the machines may be owned by the machine maker who is responsible for paying the jackpot. The casinos lease the machines rather than owning them outright. Megabucks may be the best known example of this type of machine. Megabucks Nevada starts at $7,000,000 after a jackpot. The new penny *Megabucks* video game has a jackpot that starts at $10,000,000.

Slot machines that are not linked to a large regional jackpot such as *Megabucks* usually have higher payout percentages, as linked machines have to take into consideration the large jackpot amount into their payout percentage calculations.

American slot machines

In the United States, the public and private availability of slot machines is highly regulated by state governments. Nevada is the only state that has no significant restrictions against slot machines both for public and private use. In New Jersey, slot machines are only allowed in hotel-casinos operated in Atlantic City. Several states (Illinois, Indiana, Iowa, Louisiana, Mississippi, and Missouri) allow slot machines (as well as any casino-style gambling) only on licensed riverboats or permanently anchored barges. Native American casinos on reservations cannot have true slot machines unless allowed by the state that the tribal casino is located in (per Indian Gaming Act).

Some states have restrictions on the types of slot machines that can be used in a casino or other gaming area. "Class III" slot machines are machines without restrictions, most often seen in Las Vegas or Atlantic City (commonly referred to as "Vegas-style slots"). Some casinos are in states that require them to use "Class II" slot machines, which usually have a player skill requirement attached. The primary difference between a Class III machine and a Type II machine is that with a Class III machine, a player's chance of winning any payout is the same with every play, and each machine operates independently of each other. A Class II machine mimics bingo or scratch-off lottery tickets in that all the machines are linked to play against each other, pulling a predetermined number of winning combinations from a central database and distributing those to all machines.

For a list of state by state regulations on private slot machine ownership.

Slot clubs

Many American casinos offer free memberships in "slot clubs", which return a small percentage of the amount of money that is bet in the form of "comps" (complimentary food, drinks, hotel rooms, or merchandise), or sometimes as cash back (sometimes with a restriction that the cash be redeemed at a later date). These clubs require that players use a card that is inserted into the slot machine, to allow the casino to track the player's "action" (how much the player bets and for how long), which is often used to establish a level of play that may make a player eligible for additional comps. Comps or cash back from these clubs can make a significant difference in the maximum theoretical return when playing slot machines over a long period of time.

Australian slot machines

Generally referred to as **poker machines** or **pokies**, but officially known as 'Gaming Machines', Australia has one of the highest concentration of poker machines per head of population in the world, with changes in regulations leading to a profusion of poker machine venues across the country. Various objectors, including many branches of the clergy and also charities for the poor, have criticised the spread of the machines, as they claim that it has led to a huge rise in the levels of "problem gambling" - gambling to a level that causes financial and social stress to the gambler and their families, as well as the general levels of gambling.

Australian-style poker machines use video displays to simulate (usually) five physical reels. These machines also have additional bonusing and second-screen features such as free games and bonus levels. They also allow for multiple lines (up to 50) or multiple ways (up to 243 ways) to be played. This higher level of complexity has meant that greater revenues can be obtained by operators, but also that the potential for problem gambling to develop is increased.

Poker machines are found in casinos (approximately one in each major city) as well as pubs and clubs (usually sports, social, or RSL clubs). This greater accessibililty is also seen as a potential contributor to problem gambling.

The first Australian state to legalise this style of gambling was NSW in 1956 when they were made legal in all registered clubs in the state.

Most problem gamblers attending counselling report poker machines as the problematic form of gambling. Due to this there is a significant focus on the regulation of multi-hand poker machines, and many groups are advocating for legislative change.

Laws governing gambling in Australia are controlled at the state level and as such, they vary from state to state. In the state of Queensland gaming machines in pubs and clubs must provide a return rate of 60% while machines located in casinos must provide a return rate of 90%.

European slot machines

Slot machines are often known as **fruit machines** and **AWP** (Amusement with Prizes) in Britain. Slot machines are commonly found in pubs, clubs, arcades, and some take-away food shops. These machines commonly have 3 or 6 reels with around 16 or 24 fruit symbols printed around them. These reels are spun, and if certain combinations of fruit appear, winnings are paid from the machine, or subgames are played. These are very similar to slot machines seen in casinos and elsewhere around the world, but the term "fruit machine" is usually applied to a type of machine more commonly found in pubs and arcades. These games have lots of extra features, trails and subgames with opportunities to win money, usually more than can be won from just the reels. However, the jackpots from these fruit machines are strictly limited with many machines paying no more than a maximum of £25 in any one win.

It is known for machines to payout multiple jackpots, one after the other, this is known as a **streak** but each jackpot requires a new game to be played (circumventing the maximum £25 pound per game rule). Private members clubs are allowed "club machines" which have higher jackpots.

These machines also operate in a different fashion to American slot machines; whereas slots are programmed to pay a percentage over the long-run, there is no reason why a jackpot cannot be paid straight after one has already been won - this is because over the long-run the percentage payout will be the same. However, in the UK, a fruit machine takes on an amount above its payout percentage before winning, so if a payout is 95%, a machine will make the player lose £10 before paying out £9.50. As such, it is sensible to watch for people playing these machines but not winning as the likelihood of a win increases. This, however, is called **Sharking**.

This type of fruit machine is popular across Europe (in the countries where they are legal), and very popular in countries such as the Czech Republic, Russia, and Ukraine.

The minimum payout percentage is 70% in Britain, with pubs often setting the payout at around 78%.

It has been alleged by the Fairplay campaign that UK fruit machines employ fraudulent techniques in which gambles and chances which appear to be random are in fact pre-determined and cannot be affected by player choices. [1]

> *...at this point, you'll have gambled the win up to £25. However, the machine doesn't want you to gamble any further. If from the 5 you select "High", the machine will spin in a 3 and you'll lose. If, on the other hand, you select "Low", the machine will spin in a 9 and you'll lose...*

The claims centre around the emulation of fruit machine hardware on computers, which allow for the machines RAM state to be saved at a particular point and replayed making a different choice. The fruit machine industry has hit back at the allegations. Currently the issue has supposedly been considered by the UK Gaming Board (now the Gambling Commission) and warning notices and possibly modifications are to be put in place, though it is unclear as to whether this has happened.

Japanese slot machines

Japan has has a relatively new history in slot machines, roughly since after the American occupation during the World War II era. Most machines can be found in Pachinko parlors and the adult sections of amusement arcades, known as game centers.

The machines are regulated with IC chips, and has six different levels changing the odds of a "777". The levels provide a rough outcome of between 90% to an astonishing 160% (200% if using skills). Indeed, the Japanese slot machines are "beatable".

Despite the many varieties of the machines, there are certain rules and regulations put forward by a commission. For example, there must be three reels. Also, all reels must be accompanied by buttons which stop these reels, etc.

Myths debunked

- Standard slot machines do not get "hot" or "cold". The odds of hitting a winning combination are determined by a Random Number Generator contained in the machine's software and is exactly the same with every spin.
    - (Exception: UK-style AWP machines are **progressive** which means chances of winning will increase over time if the machine has not paid any wins out. Many also "force" wins on players in order to meet the **payout percentage**).
- Except possibly in a few jurisdictions, slot machines are never "due to be hit" if they haven't paid out a jackpot in a while.
- There is a science to the placement of slot machines on the gaming floor, but the highest paying machines are not necessarily placed in high-traffic areas. Typically, machines of similar payback percentages are grouped together, with 1% or less difference from machine to machine in the group.
- Using a slot club card does not affect the machine's payout percentage, but allows the casino to keep track of the amount wagered by a player and issue complimentaries accordingly.
- In most jurisdictions, casinos cannot alter the machine's percentages by time of day, day of week, or remotely via a computer. Changing the percentage payouts on these machines is an involved process of physically replacing parts inside the machine, and in some jurisdictions cannot be done without regulatory oversight.
    - (Exception 1: UK-style AWP machines can have their percentage easily altered via a **percentage key** (inserted onto the machines motherboard) or by the setting of dip switches. There is no requirement for this to be supervised or reported in the UK.)
    - (Exception 2: In many markets where central monitoring and control systems are used to link machines for auditing and security purposes, usually in wide area networks of multiple venues and thousands of machines, player return must usually be changed from a central computer rather than at each individual machine. A range of percentages are preprogrammed into the game software and selected

by configuring the machine remotely.)

Addiction

- Slot machines, like other gambling devices and games, can be addictive to some individuals.

Trivia

- The first Liberty Bell slot machine can be found at the Liberty Belle Saloon & Restaurant on 4250 S. Virginia, Reno, Nevada.

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Spinning Top

A **top**, or **spinning top**, is a children's toy that can be spun on an axis, balancing on a point. The top is one of the oldest recognizable toys found on archaeological sites. Besides toys, tops have also historically been used for gambling and prophecy. Some role-playing gamers still use tops to augment dice in generating randomized results. A thumbtack may also be made to spin on the same principles.

The action of a top relies on the gyroscopic effect for its operation. Typically the top will at first wobble until the shape of the tip and its interaction with the surface force it upright. After spinning upright for an extended period, the angular momentum, and therefore the gyroscopic effect, will gradually lessen, leading to ever increasing precession, finally causing the top to topple in a frequently violent last thrash.

The top is sometimes used to make a logical point. It is possible to say "the top is moving" without contradicting the statement that "the top is standing still." The two statements can each be true in that each refers to a different kind of motion -- "the top is rotating around its axis, but the axis remains at the same spot," would be a more complete statement of both points. In general, the law of non-contradiction must be stated to allow for ambiguous subject or predicates, and so for contradictions that are only apparent.

Types of top

Concertina top
Dreidel (also spelled dradel or dreidl)
Perinola
Dueling top
Bei-goma
Beyblade
Floating top [1]
Gaming top
Tippe top
Whipping top
Whistling top
trumpo

Dreidel

A **dreidel** is a four-sided top, played with in the Jewish holiday of Hanukkah. Each side of it is bearing a letter: à (Nun), Ò (Gimel), Ô (He), é (Shin), which stands as an acronym for "àá ÒÓÕÜ ÔÙÔ éÝ" (Nes Gadol Haya Sham – "a great miracle happened there"). In Israel, instead of é (Shin), the letter ä (Pe) is written to symbolize the location of the miracle — "**ä**Ô" (Po – "here").

Dreidel is also the name for a game played with a dreidel.

Perinola

A Perinola is a 6-sided top, very similar to the dreidel, that is used for a similar game in most Latin American countries. Perinola is also the name of a stick and ball game.

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Piñata

The **piñata** is a bright candy-and-toy-filled container (generally suspended on a rope from a tree branch or ceiling) that is used during celebrations. A succession of blindfolded, stick-wielding children try to break the piñata in order to collect the candy inside of it. It has been used for hundreds of years to celebrate special occasions such as birthdays and Christmas.

Spanish colonizers are thought to have started the piñata tradition in Mexico; then the tradition went on to the Italians. However, Gavin Menzies argues that the piñata was brought to Mexico by Chinese sailors about 1421, ([1]see Part VI, Annex 25). According to legend, Marco Polo introduced the piñata to the Italians after discovering it in the Orient.

Piñatas are made from easily breakable materials, such as straw, papier-mâché, or clay; traditionally they were made in the shape of human or animal figures (often a donkey) but, in recent times, vehicles, cartoon characters, or corporate mascots have gained in popularity.

In Mexico, the piñata is traditionally shaped like a seven pointed star. It represents the devil and the seven deadly sins; hitting it with the stick makes him let go of the good things he has taken hold of. While hitting the piñata the following rhyme is sung:

Dale, dale, dale,
No pierdas el tino
Porque si lo pierdes
pierdes el camino.

Ya le diste una,
ya le diste dos,
ya le diste tres
¡y tu tiempo se acabó!

which translates as:

Hit it, hit it, hit it
Don't lose your aim
Because if you lose it
You will lose your way.

You have hit it once
You have hit it twice
You have hit it thrice
And your time is over now!

Other meanings

The word *piñata* was also used for the process whereby Nicaragua's former Sandinista leaders held on to property they had nationalized while in power. The successor government accepted these appropriations.

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Games of Strategy

A **game of strategy**, or perfect logic game, is a game where the outcome is influenced through interaction with the environment and other players. The crucial factor that separates this type of game from all others is that there is no element of chance involved. All players have equal and complete knowledge of all elements of the game. There is no physical skill required other than that necessary to interact with the game pieces.

Its benefit is the open interaction with other people. The game partners have similar starting points and evaluate how others humans may react under same conditions. So game strategies evolve with more or less spirit involved to get advanteges and/or protect artfully.

- Board games like
  - Checkers
  - Chess
  - Chinese checkers
  - Go
  - Nine Men's Morris (Mills)
- Mastermind

See also

- Game classification

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Mastermind

Players: 2

Age range: 8 and up

Setup time: < 5 minutes

Playing time: 20 minutes

Rules complexity: Easy

Strategy depth: Low

Random chance: Some

Skills required: Deduction

Mastermind is a simple code-breaking board game for two players, invented in 1970 by Mordecai Meirowitz, an Israeli postmaster and telecommunications expert. The board game may have been inspired by moo, a computer program written in the late 1960s by J. M. Grochow at MIT in the PL/I computer language for the Multics operating system.

The game is played using:

- a *decoding board*, with a *shield* at one end covering a row of four large holes, and ten additional rows containing four large holes next to a set of four small holes;
- *code pegs* of six different colors, with round heads, which will be placed in the large holes on the board; and
- *key pegs*, some colored, some white, which are flat-headed and smaller than the code pegs; they will be placed in the small holes on the board.

The two players decide in advance how many games they will play, which must be an even number. One player becomes the *codemaker*, the other the *codebreaker*. The codemaker chooses a pattern of four code pegs. Duplicates are allowed, empty allowed, i.e. the player could even choose four code pegs of the same color. The chosen pattern is placed in the four holes covered by the shield, visible to the codemaker but not to the codebreaker.

The codebreaker tries to guess the pattern, in both order and color, within ten turns. Each guess is made by placing a row of code pegs on the decoding board. Once placed, the codemaker provides feedback by placing from zero to four key pegs in the small holes of the row with the guess. A colored key peg is placed for each code peg from the guess which is correct in both color and position; a white peg indicates the existence of a correct color peg placed in the wrong position. Once feedback is provided, another guess is made; guesses and feedback continue to alternate until either the codebreaker guesses correctly, or ten incorrect guesses are made.

The codemaker gets one point for each guess a codebreaker makes. The winner is the one who has the less points after the agreed-upon number of games are played.

In 1977, Donald Knuth demonstrated that the codebreaker can solve the pattern in five moves or less, using an algorithm that progressively reduced the number of possible patterns. Subsequent mathematicians have been finding various algorithms that reduce the average number of turns needed to solve the pattern: in 1993, Kenji Koyama and Tony W. Lai found a method that required an average of 4.340 turns to solve, with a worst case scenario of six turns.

Varying the number of colors and the number of peg positions results in a spectrum of Mastermind games of different sizes and shapes. In December 2005, Jeff Stuckman and Guo-Qiang Zhang showed in an arXiv article that the Mastermind Satisfiability Problem is NP-complete, thus explicating the computational property that makes the game intrisically interesting to play.

Since 1971, the rights to Mastermind have been held by Invicta Plastics of Leicester, England. They originally manufactured it themselves, though they have since licensed its manufacture to Hasbro in most of the world, and two other manufacturers who have the United States and Israel manufacturing rights.

Computer and Internet versions of the game have also been made, sometimes with variations in the number and type of pieces involved. It can also be played with paper and pencil.

Solving the game

Here is a simple brute-force greedy algorithm to solve the game: Given previous guesses and its results (if any):

1. Calculate all possible secret combinations (secret combinations which don't conflict with the results of previous guesses), given previous guesses and their results. If there are no previous guesses, then all secret combinations are possible.
2. If number of possible secret combinations calculated in last step is:
    - ... 0, then all secret combinations are impossible (all secret combinations conflict with the results of previous guesses), hence there's no solution to the puzzle. If this

    situation is reached, then either the puzzle, guesses, or both were invalid.
    - ... 1, then there's only one secret combination possible, which must be the answer to the puzzle. Enter the secret combination and win.
    - ... greater than 1, then find a guess which will reduce the amount of possible secret combinations to a number as close as possible to the lowest possible (1, that is), given any results of this guess. Enter this guess and return to step 1. For example, one could use a guess which will yield the highest number of different results if applied to all possible secret combinations, or maybe a guess, where the mean and standard deviation of the frequency of the results is the lowest, etc.

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Simulation Games

A **simulation game** is a game that is intended to simulate the world, or an aspect of it.

Overview

A **simulation game**, or sim game, (also known as a **game of status** or **mixed game**) is a mixture of a game of skill, a game of chance and a game of strategy, which results in a simulation of a complex structure (like a stock exchange, or civilization flux). These games are quite current through their mirror of modern society. Its benefit is the representation of complex situations of communal life, interconnections in society, and partial aspects of the economy (for example, the development of the railroad).

The term can also be used to describe a video or computer game that is truer to reality (for instance, racing simulations would be racing games in which cars would handle more realistically, tank simulations would include more real life mechanics as part of the gameplay) or a game that attempts to simulate tasks performed in an artificial reality (for instance, MechWarrior/Battletech type games and games that include space flight are considered simulations, even though they have little basis in reality). The term simulation is often applied to games such as this without any modifiers, using the term this way however usually constitutes a different genre than sim games as discussed here, and are most often games with a first-person perspective (that is to say, that you view the game through though the eyes of your own fictitious character), and are often considered by a significant number of players to be overly elaborate, unwieldy, and drudgerous. It may be more accurate to describe such titles as "simulator" rather than "simulation" games, though the lines have been blurred in titles such as Activision's Battlezone and Battlezone II: Combat Commander.

Genres

Some simulation games are intended to simulate the real world; others are intended to simulate a fictional world; still others are designed to be able to do both. Simulation games also operate on different scales. Role-playing games and skirmish war games are played on an individual scale; each player controls one character. Tactical war games and operational war games simulate small-scale battles, typically involving a few hundred or at most a few thousand soldiers. Strategic war games simulate large-scale battles, campaigns, and entire wars. Grand strategy war games and nation-simulation games allow the players to control nations. Another popular genre, dating sims are meant to simulate a relationship or friendship. While fewer in number, pet-raising simulations are becoming more widespread, especially with the release of the title Nintendogs, though earlier pet sims exist, such as the Nakayoshi Pet Advance series on Game Boy Advance.

Simulation games have been played with pencil and paper since time immemorial. Maps are drawn on paper and cardboard counters or metal figures represent the characters or military units. The players may all be on the same side, or they may be on two or more opposing sides. A referee decides what is done by characters who are not controlled by players, and resolves situations which are not covered by the rules. Recently, simulation games have come to the computer. Computers are inarguably superior to humans in creating simulations, and they have allowed simulation games to become more realistic than ever before. They do, however, have one great drawback: They do not have the creativity and flexibility of a human referee. Some people also prefer the face-to-face interaction of paper-and-pencil simulation games to computer games which are played over a network. A new type of simulation game known as computer-assisted gaming seeks to overcome the limitations of both computer and paper-and-pencil (or tabletop) games.

- Role-playing games
    - Comppputer/Console RPGs
        - MMORPGs
- War games
- Nation-simulation games
- Serious games
    - Group-dynamic games
    - Organizational-dynamic games
- Board games
    - Monopoly (game)
    - Backgammon
    - Settlers of Catan
- Tabletop games
- Computer games
- Computer-assisted games
- Dating sims

Computer and video games

In computer and video games, these are frequently called **sim** games. Many of the most notable have been released by one company, Maxis.

Examples

Maxis games

SimAnt
SimCity, a game written by Will Wright where the player can create and develop a city. Three sequels followed: SimCity 2000, SimCity 3000 and SimCity 4.
SimEarth
SimFarm
SimIsle
SimLife
SimPark
SimTower, where the player constructs a simulated building complex.
The Sims, a game designed by Will Wright, where the player can control the lives of player-created people, or "Sims". As of 2003, it was the highest-selling computer game of all time, and spawned seven expansion packs, as well as a sequel, The Sims 2.

Non-Maxis games

1603 A.D., a city builder game set in the New World.
Age of Empires, a series of real-time strategy games developed by Ensemble Studios, and Microsoft Games, it spawned the sequels Age of Empires II and Age of Empires III.
Age of Mythology, a game created by Ensemble Studios the makers of the Age of Empires-series.
Thomas M. Disch's Amnesia (1986), Text adventure from EA that simulates each block and street corner in Manhattan.
Angelique, a series of ren'ai games that started in 1994.
Animal Crossing, a life simulator for GameCube.
Caesar III, a city builder game set in ancient Rome.
Capitalism, capitalism/economics/business simulator.
Civilization, a whole world sim by Sid Meier.
Emperor: Rise of the Middle Kingdom, a city builder game set in ancient China.
Immortal Cities: Children of the Nile, a society builder game set in ancient Egypt.
Jones in the Fast Lane, an early life simulator by Sierra Entertainment.
Master of Olympus: Zeus, a city builder game set in ancient Greece.
Microsoft Flight Simulator (1979), a game, originally created by Bruce Artwick, where the player pilots an aircraft.
My Life My Love - Boku no Yume - Watashi no Negai, a life simulation for Famicom.
Noctis, a galaxy simulation where the player explores from the first-person viewpoint.
Pharaoh, a city builder game set in ancient Egypt.
Seven Cities of Gold (1985), a simulation of the exploration of the New World (Americas), designed by Dani Bunten.
Trauma Center: Under the Knife, a game for the Nintendo DS where you play a doctor who has to operate on people. The game makes good use of the touch screen for DS.
Utopia on Intellivision (1982) by Don Daglow, often credited as the first "world sim" video or computer game.

See also

- Game classification
- Role-playing game
- Wargaming
- Nation-simulation game
- Tabletop game
- Computer and video games
- Dating sim

Nation-simulation Games

A nation-simulation game is a type of simulation game which simulates all or part of one or more nations.

Scale

Nation-simulation games range from the small scale, where the players are officials in a small local government (such as a county in the United States or a barony in a medieval kingdom), to the national level (where players are officials in a national government), to the international (where players are rulers of nations). In some, the players may be officials in organizations such as the United Nations, a political party, or a corporation, or may control different organizations. Some nation-simulation games combine elements of all of these; they may allow players to choose their role, or they may require players to start at a small scale work their way up.

Nation-simulation games which simulate a single government are commonly called government simulators or political simulators. The players control figures within the government, such as cabinet ministers, members of the legislature, or heads of political parties. The government involved may be a local or national government.

Nation-simulation games which simulate the world or a group of nations are commonly called geo-political simulators. Each player controls a nation or an organization.

Many examples of both government simulators and geo-political simulators are provided in the relevant articles.

Genres

Government simulators and geo-political simulators generally represent the real world. Simulations which represent countries or worlds which do not exist (whether because they are set in the past or the future, or because they represent fictional worlds or fictional universes) are sometimes referred to as micronations. However, the term micronation is seldom used for nation-simulation games; it more often refers to fictional nations which claim genuine existence, are established as a joke, or are established for academic study. There is no specific term for nation-simulation games which simulate fictional nations.

Some nation-simulation games are paper-and-pencil tabletop games. Others are computer games. Most tabletop and computer nation-simulation games originated as war games or role-playing games. Others are computer-assisted games. Computer-assisted nation-simulation games first developed as academic experiments. Some were originally played through live-action role-playing and later became computer-based. Nation-simulation games are the only form of simulation game in which the computer-assisted variety is more common than either the tabletop or computer variety.

See also

- Simulation game
- Wargaming
- Role-playing game
- Tabletop game
- Computer and video games

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Space Simulation

In its broadest definition, a **space simulation** is any software that simulates space and/or space flight. See also Space flight simulator. This could include realistic or fanciful simulations. Realistic simulations could include astronomy programs. Typically though, the term "space simulation" is spoken in the abbreviated form of "space sim" and refers to a genre of computer games - said computer games have recently been in decline from the gaming scene.

The Collapse of the Space-sim Genre

Freespace 2 was the last major space sim produced. Its poor sales combined with the commercial failure of other high-profile titles such as Starlancer and I-War (Independence War), leading to the cancellation of several high-profile titles and plunging the genre into a deep recession from which it has yet to recover.

Why did the space sim genre die? This question has remained a topic of hot contention among genre enthusiasts.

The first, and most obvious reason, is the rise of the First-Person

Shooter and Real-time strategy genres, which led to a boom in the popularity of PC gaming. Previous attempts by PC game developers to compete in console-style games had failed, but with the success of the FPS and RTS, computer game developers finally had homegrown hits on their hands. Casual gamers flocked in droves to games like Quake and Starcraft, ignoring other traditional PC genres such as space sims, adventure games, flight simulators and wargames. It is worth noting that all four genres collapsed at roughly the same time, the late 1990s / early 2000s.

First-person shooters were also an ideal technological showcase for the quantum leaps in computer graphics and processing power at the turn of the century. 3D graphics accelerators and multi-gigahertz processing speeds meant that, for the first time, terrestrial environments could be realistically rendered. In first-person shooters, detail was lavished on lush green scenery and elaborate architecture which advanced in each incarnation. In contrast, space offered little eye candy other than the stars. The vast emptiness of space, a boon in the early days of gaming when graphics power came at a premium, had finally become a liability.

At the same time id Software and Blizzard Entertainment were busy revamping the state of PC gaming, the internet was booming. This new technology would itself change gaming, ushering in the “multiplayer revolution”. This began with LAN multiplayer, but took on a life of its own when the Internet opened up an entire world to prospective gamers. FPS and RTS developers were quick to take advantage of this new technology; in contrast, space sims would not offer internet play until Starlancer in 1999, by which time it was too late.

Finally, there exists the issue of joysticks. Joysticks were far less prevalent among the gaming community at the end of the 1990s then they were at the beginning of the decade, the genre’s heyday, and many believe that this has been a major factor in the genre’s decline. Digital Anvil’s Freelancer was an attempt to rectify this issue by substituting an entirely mouse-based system for combat; this was not entirely successful except in antagonizing hardcore space simmers.

The Future of the Genre

With the demise of many of the major players in the genre, the future of the mission-oriented space simulator is murky. Reportedly LucasArts and Electronic Arts are interested in future titles in their respective X-Wing and Wing Commander series, but so far neither have unveiled any serious proposals to do so. In the meantime, the only serious contenders are independent titles such as Starshatter and the Battlecruiser 3000AD series, both of which are complex, feature-heavy titles on the opposite end of the spectrum.

Elite-type games have done somewhat better; Freelancer enjoyed moderate success, and the X series is in its third incarnation. However, neither have brought about the space sim renaissance enthusiasts have hoped for.

There has been one interesting trend, coming ironically from the first-person shooter genre. Recent titles, such as Unreal Tournament 2004 and Star Wars: Battlefront II, include space combat levels as an outgrowth of the player-controllable vehicles that have been a staple of the genre has used for some time. These levels are easily playable with the mouse and have reintroduced space combat to casual gamers. It is entirely possible that the future of the space simulator may spring from here.

List of realistic space simulations

Orbiter
Celestia
Eagle Lander 3D
Microsoft Space Simulator
Space Combat
NASA Solar System Simulator
NASA PlanetQuest: 3D New Worlds Atlas

List of "space sim" computer games

Darkstar One
Darklight Conflict
Freespace series
Elite
Frontier
First Encounters
Escape Velocity
EVE Online (a massive multiplayer online game set in space)
Evochron : Alliance
Freelancer
Galaxy Trek
Haegemonia: Legions of Iron
Independence War (aka I-War)
Independence War 2: Edge of Chaos
Nexus: The Jupiter Incident
Noctis (simulates a galaxy of stars, planets and moons for pure exploration)
Oolite (Object Oriented eLite)
Space Conflict
Star Control
Starflight
Starlancer
Star Trek: Bridge Commander
Star Fleet Command
Star Wars: Rogue Squadron
Star Wars: Starfighter
Tachyon: The Fringe
TDZK
Vega Strike (Open Source)

Wing Commander and Privateer series
X: Beyond the Frontier
X2: The Threat
X3: Reunion
X-Wing series
X-Wing
TIE Fighter
X-Wing vs. TIE Fighter
X-Wing Alliance

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Sport

A **sport** consists of a physical and mentally competitive activity carried out with a recreational purpose for competition, for self-enjoyment, to attain excellence, for the development of a skill, or some combination of these. A sport has physical activity, side by side competition, self-motivation and a scoring system. The difference of purpose is what characterises sport, combined with the notion of individual (or team) skill or prowess.

History of sport

The development of sport throughout history teaches us a great deal about social changes, and about the nature of sport itself.

There are many modern discoveries in France, Africa, and Australia of cave art (see, for example, Lascaux) from prehistory which provide evidence of ritual ceremonial behaviour. Some of these sources date from over 30,000 years ago, as established by carbon dating. Although there is scant direct evidence of sport from these sources, it is reasonable to extrapolate that there was some activity at these times resembling sport.

There are artifacts and structures which suggest that Chinese people engaged in activities which meet our definition of sport as early as 4000 BC. Gymnastics appears to have been a popular sport in China's past. Monuments to the Pharaohs indicate that a range of sports were well developed and regulated several thousands of years ago, including swimming and fishing. Other sports included javelin throwing, high jump, and wrestling. Ancient Persian sports such as the traditional Iranian martial art of Zourkhaneh had a close connection to the warfare skills. Among other sports which originate in Persia are polo and jousting.

A wide range of sports were already established at the time of the Ancient Greece. Wrestling, running, boxing, javelin, discus throwing, and chariot racing were prevalent. This suggests that the military culture of Greece was an influence on the development of its sports and vice versa. The Olympic Games were held every four years in Ancient Greece, at a small village in Pelopponisos called Olympia.

Sport has been increasingly organised and regulated from the time of the Ancient Olympics up to the present century. Activities necessary for food and survival became regulated activities done for pleasure or competition on an increasing scale, for example hunting, fishing, horticulture. The Industrial Revolution and mass production brought increased leisure which allowed increases in spectator sports, less elitism in sports, and greater accessibility. These trends continued with the advent of mass media and global communication. Professionalism became prevalent, further adding to the increase in sport's popularity. Not only has professionalism helped increase the popularity of sports, but additionally the need to have fun and take a break from a hectic workday or to relieve unwanted stress, as with any profession.

A classification of sports

One system for classifying sports is as follows, based more on the sport's aim than on the actual mechanics. The examples given are intended to be illustrative, rather than comprehensive.

Achievement

Target (Archery, shooting ...)
Display (Gymnastics, bodybuilding, equestrianism, diving...)
Strength (Weight-lifting, triple jump, shot put ...)

Sports that fall into multiple categories

Biathlon
Curling
Paintball

Sportsmanship

Sportsmanship is defined as "conduct and attitude considered as befitting participants, including a sense of fair play, courtesy toward teammates and opponents, a striving spirit, and grace in losing."

It is interesting that the motivation for sport is often an elusive element. For example, beginners in sailing are often told that dinghy racing is a good means to sharpen the learner's sailing skills. However, it often emerges that skills are honed to increase racing performance and achievements in competition, rather than the converse. Sportsmanship expresses an aspiration or ethos that the activity will be enjoyed for its own sake. The well-known sentiment by sports journalist Grantland Rice, that it's “not that you won or lost but how you played the game," and the Modern Olympic creed expressed by its founder Pierre de Coubertin: "The most important thing . . . is not winning but taking part” are typical expressions of this sentiment.

But often the pressures of competition (See the related article, "Winning isn't everything; it's the only thing." or an obsession with individual achievement - as well as the intrusion of technology - can all work against enjoyment and fair play by participants.

People responsible for leisure activities often seek recognition and respectability as sports by joining sports federations such as the IOC, or by forming their own regulatory body. In this way sports evolve from leisure activity to more formal sports: relatively recent newcomers are BMX cycling, snowboarding, wrestling, etc. Some of these activities have been popular but uncodified pursuits in various forms for different lengths of time. Indeed, the formal regulation of sport is a relatively modern and increasing development.

Sportsmanship, within any given game, is how each competitor acts before, during, and after the competition. Not only is it important to have good sportsmanship if one wins, but also if one loses. For example, in football it is considered sportsmanlike to kick the ball out of play to allow treatment for an injured player on the other side. Reciprocally, the other team is expected to return the ball from the throw-in.

Violence in sports involves crossing the line between fair competition and intentional aggressive violence. Athletes, coaches, fans, and parents sometimes unleash violent behaviour on people or property, in misguided shows of loyalty, dominance, anger, or celebration.

Professionalism and the regulation of

sport

The entertainment aspect of sport, together with the spread of mass media and increased leisure time, has led to professionalism in sport. This has resulted in some conflict, where the paycheck can be seen as more important than recreational aspects: or where the sport is changed simply to make it more profitable and popular therefore losing some of the traditions valued by some. NASCAR is not a sport.

The entertainment aspect also means that sportsmen and women are often elevated to celebrity status, or in some cases near-god-like. Today the consensus is that David Beckham (England and Real Madrid Footballer) is the most famous sportsman in the world, with a fanatical following particularly in Asia where statues have been erected of his likeness.

The successful execution of a sport requires the consensus agreement of the participants on a set of rules for fair competition. This has led to the control of each sport through a regulatory body to define what methods of competition are acceptable and what are considered cheating.

Sport and politics

There have been many dilemmas for sports where a difficult political context is in place.

When apartheid was the official policy in South Africa, many sportspeople adopted the conscientious approach that they should not appear in competitive sports there. Some feel this was an effective contribution to the eventual demolition of the policy of apartheid, others feel that it may have prolonged and reinforced its worst effects.

The 1936 Summer Olympics held in Berlin was an illustration, perhaps best recognised in retrospect, where an ideology was developing which used the event to strengthen its spread through propaganda.

In the history of Ireland, Gaelic sports were connected with cultural nationalism. Even until the mid 20th century a person could have been banned from playing Gaelic football, hurling, or other sports administered by the GAA if s/he played or supported Football, or other games seen to be of British origin. Until recently the GAA continued to ban the playing of soccer and Rugby union at Gaelic venues under the controversial Rule 42, although Gaelic games are frequently played on soccer and rugby arenas, particularly outside of Ireland. Until recently, under Rule 21, the GAA also banned members of the British security forces and members of the RUC, now reconstituted as the PSNI, from playing Gaelic games, but the advent of the Good Friday Agreement in 1998 led to the eventual removal of the ban.

Nationalism in general is often evident in the pursuit of sport, or in its reporting: people compete in national teams, or commentators and audiences can adopt a partisan view. These trends are seen by some as contrary to the fundamental ethos of sport being carried on for its own sake, for the enjoyment of its participants.

Art and sport

Sport has many affinities with art. Ice skating and Tai chi, for example, are sports that come close to artistic spectacles in themselves: to watch these activities comes close to the experience of spectating at a ballet. Similarly, there are other activities that have elements of sport and art in their execution, such as performance art, artistic gymnastics, Bodybuilding, Parkour, Yoga, dressage, etc.

The fact that art is so close to sport in some situations is probably related to the nature of sport. The definition of "sport" above put forward the idea of an activity pursued not just for the usual purposes, for example, running not simply to get places, but running for its own sake, running as well as we can.

This is similar to a common view of aesthetic value, which is seen as something over and above the strictly functional value coming from an object's normal use. So an aesthetically pleasing car is one which doesn't just get from A to B, but which impresses us with its grace, poise, and charisma.

In the same way, a sporting performance such as jumping doesn't just impress us as being an effective way to avoid obstacles or to get across streams. It impresses us because of the ability, skill, and style which is shown.

Art and sport were probably more clearly linked at the time of Ancient Greece, when gymnastics and calisthenics invoked admiration and aesthetic appreciation for the physical build, prowess and 'arete' displayed by participants. The modern term 'art' as skill, is related to this ancient Greek term 'arete'. The closeness of art and sport in these times was revealed by the nature of the Olympic Games which, as we have seen, were celebrations of both sporting and artistic achievements, poetry, sculpture and architecture.

The terms 'sport' and 'sports'

In Commonwealth English, sporting activities are commonly denoted by the collective noun "sport". In American English, "sports" is more common for this usage. In all English dialects, "sports" is the term used for more than one specific sport. For example, "football and swimming are my favourite sports" would sound natural to all English speakers, whereas "I enjoy sport" would sound less natural than "I enjoy sports" to many North Americans.

Recommended reading

- *The Meaning of Sports* by Michael Mandel (PublicAffairs, ISBN 1-58648-252-1).
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Ball Games

A **ball game** is a sport played with a ball.

There are many popular games or sports involving some type of ball or similar object. These games can be grouped by the general objective of the game, sometimes indicating a common origin either of a game itself or of its basic idea:

- Bat-and-ball games, such as cricket and baseball.
- Two-goal games, such as basketball and all forms of football and hockey.
- Vpolleying games, such as volleyball and tennis.
- "Target" games, such as bowling
- and so on

Popular ball games around the world include:

Baseball
Basketball
Billiards (including snooker, eight ball and pool variations)
Blitzball (fictional game)
Bocce
Boules
Bowling
Bowls
Calvinball (see Calvin and Hobbes)
Canoe polo

- Cricket (see cricket ball)
- Crockey
- Croquet
- Dodgeball
- Football:
  - American football
  - Australian rules football
  - Gaelic Football
  - International Rules Football
  - Soccer
  - Rugby Football
    - Footbag
- Four square
- Golf (see golf ball)
- Handball:
  - American handball
  - Team handball
- Hockey:
  - Field hockey
  - Ice hockey
  - Rink hockey
- Hurling
- Jai alai
- Juggling
- Lacrosse
- Mesoamerican ballgame
- Native American Stickball (Toli)
- Netball
- Pétanque
- Polo
- Quidditch (fictional game)
- Shinty
- Skee ball
- Squash
- Stickball
- Tee Ball
- Tetherball
- Tennis
- Tennis Polo/Toccer
- Ulama game
- Volleyball
- Water polo

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Arcade Games

An **arcade game** is a coin-operated entertainment machine, typically installed in businesses such as restaurants, pubs, video arcades, and Family Entertainment Centers. Most arcade games are redemption games, video games or pinball machines.

History

See also: Timeline of arcade game history

The first popular "arcade games" were early amusement park midway games such as shooting galleries, ball toss games, and the earliest coin-operated machines, such as those which claim to tell a person their fortune or played mechanical music. Although none of these were coin-operated games themselves, the old midways of 1920s-era amusement parks (such as Coney Island in New York) provided the inspiration and atmosphere of later arcade games.

In the 1930s, the earliest coin-operated pinball machines were made. These early amusement devices were distinct from their later electronic cousins in that they were made of wood, did not have plungers or lit-up bonus surfaces on the playing field, and used mechanical instead of electronic scoring readouts. By around 1977, most pinball machines in production switched to using solid state electronics for both operation and scoring.

In 1972, Atari was formed by Nolan Bushnell and Ted Dabney. Atari essentially created the coin-operated video game industry with the game Pong, the smash hit electronic ping pong video game. Pong proved to be popular, but imitators helped keep Atari from dominating the fledging coin-operated videogame market. Nonetheless, video game arcades sprang up in shopping malls and small, "corner arcades" appeared in restaurants, grocery stores, and bars all over the United States and other countries during the late 1970s and early 1980s. Games such as Space Invaders (1978), Pac-Man (1980), Donkey Kong (1981), and Tapper (1983) were especially popular.

By the mid-1980s, the arcade video game craze was beginning to fade due to the reputation of arcades as being seedy, unsafe places as well as the advances in home video game console technology. The last gasp of the youth arcade subculture, as it once was, may have been the advent of two-player fighting games such as Street Fighter II (1991) by Capcom, Mortal Kombat (1992) by Midway Games, and Fatal Fury(1992) and King of Fighters (1994-2005) by SNK.

By 1996, 32-bit home video game consoles and computers with 3D accelerator cards soon closed the gap on early '90s arcade coin-op games technologically (because arcade designer makers failed to push the technology envelope because the high game turnover in Japan encouraged standardized systems used for a long term) and the two-player fighting game genre waned in the late 1990s due to controversy over graphic video game violence. This waning essentially killed what was left of the old arcade game subculture of the late 1970s and 1980s and has given rise to the blander (but safely supervised) "family fun centers" of the present. Many old video game arcades have long since closed and classic coin-operated games have become largely the province of dedicated hobbyists.

Today's arcades have found a niche in games that use special controllers largely inaccessible to home users. Examples are rhythm games such as Dance Dance Revolution (1998) and DrumMania (1999), and rail shooters such as House of the Dead (1998) and Time Crisis. However, with the increase of Internet cafes opening (which also provide gaming services), the need for video arcades and such arcade games are reduced, and many have been shut down or merged with the cafes as a result.

Technology

Virtually all modern arcade games (other than the very traditional midway-type games at county fairs) make extensive use of solid state electronics and integrated circuits. Coin-operated arcade video games generally use multiple CPUs, additional sound and graphics chips and/or boards, and the latest in computer graphics display technology. The newest arcade video games tend to also have interactivity as part of the game design, making the game player feel like they are more kinesthetically connected to the game itself. One form of interactive technology, virtual reality, has failed to truly become popular in arcade games, but this is due to the technical limitations of truly being able to achieve real virtual reality by any means.

Emulation

Many older arcade games are enjoying a revival among fans, thanks to emulators such as MAME, which can be run on modern computers and a number of other devices.

Locations

In addition to restaurants and video arcades, arcade games are also found in bowling alleys, college campuses, dormitories, laundromats, movie theatres, supermarkets, shopping malls, airports, bar/pubs and even bakeries. In short, arcade games are popular in places open to the public where people are likely to be waiting on something.

More recently, Arcade games have found a new home in sites that contain browser-based games. Many independent developers are now producing Arcade games that are designed specifically for use on the Internet. These games are usually designed with Flash/Java/DHTML and run directly in web-browsers.

Game design

Arcade games often have very short levels, simple, easy to grasp controllers, iconic characters, and rapidly increasing difficulty. They are designed as quick bursts of adrenaline-fueled thrills, as opposed to most console games, which feature more in-depth gameplay, and stronger storylines. This is due to being coin-operated, where you are essentially renting the game for as long as your game avatar can stay alive. Games on consoles or the PC can be refered to as an "arcade game" if it shares these qualities, or if it's a direct port of an arcade title.

Arcade racing games have simplified physics and do not require much learning time, in opposition to racing simulators. Cars can turn sharply without losing speed or overdrifting, and AI is programmed so the rivals are always near the player (rubberband effect).

See also

- Arcade cabinet
- Golden age of arcade games
- High score
- List of arcade games

Video Arcade | Arcade Cabinet | List of Arcade Games

Golden Age of Arcade Games

The **Golden Age of Arcade Games** was a peak era of arcade game popularity and innovation. Some opinions place this period's beginning in late 1979 or 1980 when the first color arcade games appeared and arcades began to become prevalent, and its ending in the mid-1980s. However, more generous definitions place its start at the 1978 release of Space Invaders and its end in the mid-1990s with the release of home gaming systems which were more powerful than typical arcade hardware, due to their ability to render 3-D.

Overview

During the early 1980s, arcade game technology had become sophisticated enough to offer good-quality graphics and sounds, but it was still fairly basic (realistic images and full motion video were not yet available, and only a few games used spoken voice) and so the success of a game had to rely on simple and fun gameplay. This emphasis on the gameplay is why many of these games continue to be enjoyed today despite having been vastly outdated by modern computing technology.

The Killer List of Videogames (KLOV) web site has compiled a (subjective) list of the "Top 100 (arcade) Video Games." Fifty of them (including all the games on its Top 10 list) were introduced during the period from 1979 to 1984.

Business

The Golden Age was a time of great technical and design creativity in arcade games. Games were designed in a wide variety of genres while developers had to work within strict limits of available processor power and memory. The era also saw the rapid spread of video arcades across North America and Japan.

At this time, arcade games started to appear in supermarkets, liquor stores, gas stations and many other retail establishments looking for extra income. Popular games occasionally caused a crush of teenagers, eager to try the latest entertainment entry.

Probably the most successful arcade game companies of this era were Namco (especially in Japan) and Atari Games (especially in the

United States). Other notables include Nintendo (whose mascot, Mario, was introduced in 1981's Donkey Kong), Bally Midway Manufacturing Company (who later was purchased by Williams and Atari Games), Capcom, Cinematronics, Konami, Sega, Taito, Williams, and SNK.

Technology

Arcades began to gain momentum in the late 1970s with games such as Space Invaders (1978) and Asteroids (1979) and became widespread in 1980 with Pac-Man, Centipede, Defender, and others. The central processing unit in these games allowed for more complexity than earlier discrete circuitry games such as Atari's Pong (1972).

The Golden Age saw developers experimenting with new hardware, creating games which used the crisp lines of vector displays as opposed to standard raster displays. A few of these games became great hits, such as 1980's Battlezone and Tempest and 1983's Star Wars, all from Atari, but vector technology fell out of favor with arcade game companies due to the high cost of repairing vector displays. (Vectrex, a home video game system with a built-in vector display, was released in 1982.)

Developers also experimented with laserdisc players for delivering movie-quality animation. The first game to exploit this technology, 1983's Dragon's Lair from Cinematronics, was three years in the making. It was a sensation when it was released (and, in fact, the laserdisc players in many machines broke due to overuse), but the genre dwindled in popularity because the games were fairly linear and depended less on reflexes than on memorizing sequences of moves.

New controls cropped up in a few games, though, arguably, joysticks and buttons remained the favorites for most manufacturers. Atari introduced the trackball with 1978's Football. Spy Hunter included a life-like steering wheel and Hogan's Alley introduced tethered light guns to the arcade market. Other specialty controls, such as pedals in racing games and a crossbow-shaped light gun in Crossbow, also debuted in this era.

Gameplay

With the enormous success of the early games, dozens of developers jumped into the development and manufacturing of arcade video games. Some simply copied the "invading alien hordes" idea of

Space Invaders and turned out successful imitators like Galaxian, Galaga, and Gyruss, while others tried new concepts and defined new genres. Rapidly evolving hardware allowed new kinds of games which surpassed the shoot-em-up gameplay of the earliest games.

Games such as Donkey Kong and Qix introduced new types of games where skill and timing are more important than shooting as fast as possible. Other examples of innovative games are Atari's Paperboy where the goal is to successfully deliver newspapers to customers, and Sega's Frogger where the object is to safely guide frogs through traffic. The theme of Exidy's Venture is dungeon exploration and treasure-gathering. One innovative game, Q*Bert, played upon the user's sense of depth perception in order to deliver a novel experience.

Some games of this era were so popular that they entered the popular culture. 1980's release of Pac-Man caused such a sensation that it initiated what is now referred to as "Pac-Mania." This later became the title of the last coin-operated game in the series, released in 1987. Released by Namco, the game featured a yellow, circle-shaped creature trying to eat dots through a maze while avoiding pursuing enemies. Though no one could really agree what the "hero" or enemies represented (sometimes they were referred to as ghosts, other times goblins or just monsters), the game was extremely popular; there are anecdotes to the effect that some game owners had to empty the game's coin bucket every hour in order to prevent the game's coin mechanism from jamming from having too many coins in the receptacle. The game spawned an animated television series, numerous clones, a cartoon series, Pac-Man branded foods and a hit pop song, "Pac-Man Fever". Though many popular games quickly entered the lexicon of popular culture, most have since left, and "Pac-Man" is unique in remaining a recognized term in pop culture.

The enormous popularity of arcade games also led to the very first video game strategy guides; these guides (rare to find today) discussed in exacting detail the patterns and strategies of each game, including variations, to a degree that few guides seen since can match. "Turning the machine over" by making the score counter overflow and reset to zero was often the final challenge of a game for those who mastered it, and the last obstacle to getting the highest score.

Most popular games

The games below were some of the most popular and influential games of the era. All occupy a position in the KLOV's "Top 100 Videogames" list

Space Invaders (1978)

Qix (1981)

- Asteroids (1979)
- Galaxian (1979)
- Lunar Lander (1979)
- Battlezone (1980)
- Berzerk (1980)
- Centipede (1980)
- Defender (1980)
- Missile Command (1980)
- Pac-Man (1980)
- Star Castle (1980)
- Tempest (1980)
- Warlords (1980)
- Wizard of Wor (1980)
- Donkey Kong (1981)
- Frogger (1981)
- Galaga (1981)
- Ms. Pac Man (1981)
- Vanguard (1981)
- Burgertime (1982)
- Dig Dug (1982)
- Joust (1982)
- Moon Patrol (1982)
- Pole Position (1982)
- Q*Bert (1982)
- Robotron 2084 (1982)
- Time Pilot (1982)
- Tron (1982)
- Xevious (1982)
- Zaxxon (1982)
- Dragon's Lair (1983)
- Elevator Action (1983)
- Spy Hunter (1983)
- Star Wars (1983)
- Tapper (1983)

The end of the era

The Golden Age cooled as copies of popular games began to saturate the arcades. Arcades remained commonplace through the early 1990s and there were still new genres being explored, but most new games were shooters, maze games, and other variations on old familiar themes.

New generations of home computers and home video game consoles also sapped interest from arcades. Earlier consoles, such as the Atari 2600 and Mattel's Intellivision, were general-purpose and were meant to play a variety of games, and often couldn't measure up to arcade game hardware, which was built for the singular purpose of providing a single game well. In fact, the glut of poor-quality home video game systems contributed in no small way to the video game crash of 1983. But the debut of the Nintendo Entertainment System (1985) began to level the playing field by providing a reasonably good arcade experience at home. In the early to mid 1990s, the Super Nintendo and the Sega Genesis greatly improved home play and some of the technology was even integrated into a few arcade machines. By the time of the Sony PlayStation (1994) and the Nintendo 64 (1996), both of which boasted true 3D graphics, many video game arcades across the country had gone out of business.

The arcade game industry still exists today, but in a greatly reduced form. Arcade game hardware is often based on home game consoles to facilitate porting an arcade game to a home system; there are arcade versions of Sega Dreamcast, Sony PlayStation 2, and Microsoft Xbox home consoles. Some arcades have survived by expanding into ticket-based prize redemption and more physical games with no home console equivalent, such as skee ball and whack-a-mole. Some genres, such as dancing and rhythm games (such as Dance Dance Revolution, part of the Bemani series) continue to be popular in arcades, particularly in Japan.

The relative simplicity yet solid gameplay of many of these early games has inspired a new generation of fans who can play them on mobile phones or with emulators such as MAME. Some classic arcade games are reappearing in commercial settings, such as Namco's *Ms. Pac-Man 20 Year Reunion / Galaga Class of 1981* two-in-one game, or integrated directly into controller hardware (joysticks) with replaceable flash drives storing game ROMs.

Legacy

The Golden Age of Arcade Games spawned numerous cultural icons and even gave some companies their identity. Elements from games such as Space Invaders, Pac-Man, Donkey Kong, Frogger, and Centipede are still recognized in today's popular culture.

The phenomenal success of these early video games has led many hobbyists who were teenagers during the Golden Age to collect some of these classic games. Since few have any commercial value any longer, they can be acquired for US$200 to US$500 (though fully restored games can cost much more). Some fans of these games have companies devoted to restoring the classic games, and others, such as Arcade Renovations, which produces reproduction art for classic arcade games, focus solely on one facet of the restoration activity. Many of these restorationers have set up websites on the Internet full of tips and advice on restoring games to mint condition. There are also several newsgroups devoted to discussion around these games.

Further reading

The Official Price Guide to Classic Video Games by David Ellis (2004), ISBN 0375720383

The Ultimate History of Video Games: From Pong to Pokemon--The Story Behind the Craze That Touched Our Lives and Changed the World by Steven L. Kent (2001), ISBN 0761536434

See also

- Arcade cabinet
- List of arcade games
- List of video game consoles

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Timeline of Arcade Game History

This article contains a timeline of notable events in the history of arcade gaming:

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- 1 1971
- 2 1972
- 3 1975
- 4 1976
- 5 1981
- 6 1982
- 7 1983
- 8 1986
- 9 1988
- 10 1989
- 11 1992
- 12 1993
- 13 1994
- 14 1999

1971

- *Computer Space*, the first ever coin-operated arcade video game, is released by Nutting Associates.

1972

- Atari launches Pong, the first commercially successful video game.

1975

- Taito releases Gun Fight, the first arcade video game to use a microprocessor.

1976

- Atari releases Night Driver, the earliest example of a first-person perspective racing game.

1981

- DECO releases DECO Cassette System, the first standardized arcade platform, for which many games were made.

1982

- Buck Rogers Planet of Zoom is released by Sega with the first use of scaling sprite 3D effects.

1983

- *I, Robot*, the first commercially produced 3D-polygonal game is released.
- Bally Midway releases Journey, the first game with digitized sprites.
- Minefield was released by Stern, the first game to use parallax scrolling.
- Crossbow, by Exidy, is released. It is the first game with fully digitized sound and graphics (previously games featured only pre-recorded cassette playback of realistic sound). It also features some of the most advanced graphics of the time.
- *Mr. Do* released to worldwide acclaim and much beating of chests.

1986

- Exidy releases Chiller, the most violent arcade game ever made until the Mortal Kombat series, and to this day considered the most gratuitously violent arcade game.

- Sega releases Outrun.

1988

- NARC, by Midway is released.

- Reikai Doushi, by Home Data is released, the first digitized fighting game and the first claymation fighting game.

1989

- *Exterminator*, the first game with fully digitized graphics, is released. It will have the highest quality digitized graphics until the release of *Mortal Kombat 2*.

1992

- Sega releases *Holosseum*, a game which uses a holographic monitor.

1993

- Mortal Kombat II is released, featuring high quality digitized graphics, and the most advanced sound system in arcades at the time, the DCS sound system which allowed for MP3 style compression to all sounds.

1994

- Killer Instinct is released, the first arcade game with a hard disk, up to that point the game with the highest quality graphics pre-rendered by a rendering program, featuring to this day the highest quality use of the movie background technique.

1999

- *Rush 2049* is released, the last arcade game to bear the Atari Games logo. Atari Games in Milpitas is renamed Midway Games West, and closes it's coin-op product development division.

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Redemption Games

Redemption games are typically arcade games of skill that reward the player proportionally to their score in the game. The reward most often comes in the form of tickets, with more tickets being awarded for higher scores. These tickets can then be redeemed (hence the name) at a central location for prizes. The most inexpensive prizes (candy, small plastic or rubber toys) may only require a small number of tickets to acquire, while the most expensive ones (skateboards, low end electronics) may require several thousand. In general, the amount of money spent to win enough tickets for a given prize will far exceed the price of the prize itself.

A popular variation on the ticket-based redemption game is to contain the prizes internally. Crane drop games have used this strategy for years, and more recently some redemption videogames have started offering internal prizes. The prizes in these machines are often better than anything that can be won by accumulating tickets; but these games have an "all-or-nothing" strategy, so the games are correspondingly made in such a way that a winner comes infrequently, and all other players get nothing at all.

Redemption games can be seen as the modern successor to carnival games, as the same general principles apply.

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Video Arcade

A **video arcade** (known as an **amusement arcade** in the United Kingdom) is a place where people play arcade video games. Traditionally, customers of these establishments were overwhelmingly teen males. However presently families are the largest arcade constituent, mainly because the lack of standard new games being released in arcades (arcades now are comprised mostly of deluxe games which are more popular with families).

Video arcades typically have subdued lighting to inhibit glare and enhance the viewing of the game's video display. This atmosphere has added to the stores' sometimes negative reputation in the United States, as well as in other countries. In Japan, however, male and female teens and adults can often be found enjoying arcades, typically on dates.

With the increase of Internet cafes opening (which also provide gaming services), the need for video arcades and such arcade games are reduced, and many have been shut down or merged with the cafes as a result.

Types of games

The video games are typically in arcade cabinets. The most common kind are *uprights*, tall boxes with a monitor and controls in front. Customers insert coins or tokens into the machines (or use magnetic cards) and stand in front of them to play the game. These traditionally were the most popular arcade format, although presently American arcades make much more money off deluxe driving games and ticket redemption games. Japanese arcades, while also heavily featuring deluxe games, continue to do well with traditional JAMMA arcade video games.

Some machines, such as Ms. Pac Man and Joust, are occasionally in smaller boxes with a flat, clear glass or plexiglass top; the player sits at the machine playing it, looking down. This style of arcade game is known as a *cocktail-style arcade game table*, since they were first popularlized in bars.

Some arcade games, such as racing games, are designed to be sat in or on. These types of games are sometimes referred to as *sit-down* games. Sega is one of the largest manufacturers of these types of arcade games.

Arcades are not limited to video games only, though. Pinball machines and redemption games such as skee ball are also common in many arcades. There may be a counter where players can redeem the tickets earned at the latter for prizes ranging from cheap toys to dolls and jewelry.

Other kinds of machines can also be seen at video arcades, like gambling machines such as slot machines and pachinko machines, or even vending machines. Large toys and rides usually seen in amusement parks are also common in certain arcades.

Popularity

Video arcades started springing up in the late 1970s and were most popular during the golden age of arcade games, the mid-1980s.

During this time, arcades were so popular in the United States that school children could easily pass one or two on their way to or from school. This disturbed many parents who disapproved of the perceived seedy atmosphere of the arcades and of their children's use of money on the "frivolous" activity of video game playing. Some attempts were made to prohibit children's patronage of such establishments with varying degrees of success.

Most opposition to such stores has evaporated with the decline of these businesses beginning in the mid-1990s. Some stores still exist in the US, but not in nearly the large numbers since the mid-1980s. This decline is due mainly to the fact that after 1994 arcade game companies failed to stay ahead of the technology curve and would release games that had graphics equal to or worse than the video game consoles of the time.

High game turnover in Japanese arcades required quick game design, leading to the adoption of standardized systems like JAMMA, Neo-Geo and CPS-2. These systems were essentially arcade-only consoles where the video game ROM could be swapped easily to replace a game. This allowed easier development and replacement of games, but it also discouraged the hardware innovation necessary to stay ahead of the technology curve.

Most US arcades didn't even see the intended benefit of this practice since many games weren't exported to the US, and if they were, distributors generally refused to release them as simply a ROM, preferring to sell the entire ROM, console, and sometimes cabinet as a package. In fact, several arcade systems such as Sega's NAOMI board are arcade versions of home systems.

Video arcades are still very popular in Japan, where they are called game centers (²üà»ó¿ü). Game centers are made up of four general types of machines: sit-down games, prize-awarding games, casino games, and photo booths. Sit-down games are still the most popular, and as mentioned above, Sega dominates the market for sit-down games. However, Konami's Bemani division had dominated the music simulation genre of games, which is becoming increasingly popular in Asian culture. Prize-awarding games often include machines such as the UFO catcher (known as the "crane machine" in the US), and prizes are generally merchandise of popular animation characters. Casino games (á¿ë²üà) include pachinko and slot machines, although you cannot win money from these machines. Photo booths (×ê¯é) are especially popular among teenage girls, who trade tiny photos of themselves among friends.

In the United Kingdom, arcades were particularly popular in seaside resorts where, until around 1994, a game would cost between 10UKp and 30p. The decline of the traditional arcade, however, did not occur in line with the stagnation in technology improvements. Indeed, it was the huge leap towards polygon 3D games in the mid-90s that caused the decline. With the improvements in technology came considerable price rises, often at £1 a game. This isolated the traditional teen male visitor and many of the businesses fell into decline. They were forced to accommodate more for their other traditional visitor group, the middle-aged male, which precipitated a shift towards a more gambling focussed businesses. As a result, many arcades in the UK today are comprised mostly of fruit machines.

See also

- List of arcade games

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Arcade Cabinet

An **arcade cabinet**, also known as an **arcade machine** or **coin-op**, is the housing within which an arcade game's hardware resides. Most conform to the JAMMA standard, a way of wiring the machine.

Parts of an arcade cabinet

Note: Because arcade cabinets vary according to the games they were built for or contain, they may well not possess all of the parts listed below:

- A **monitor**, on which the game is displayed. They may display either raster or vector graphics, raster being most common. Standard resolution is between 262.5 and 315 vertical lines, depending on the refresh rate (usually between 50 and 60 Hz). Slower refresh rates allow for better vertical resolution. Monitors may be oriented horizontally or vertically, depending on the game. Some games use more than one monitor.
- A **marquee**, a sign above the monitor displaying the game's title. They are often brightly colored and backlit.
- A **bezel**, which is the border around the monitor. It may contain instructions or artwork.

- A **control panel**, a level surface near the monitor, upon which the game's controls are arranged. Control panels sometimes have playing instructions. Players often pile their coins or tokens on the control panels of upright and cocktail cabinets.
- **Coin slots**, **coin returns** and the **coin box**, which allow for the exchange of money or tokens. They are usually below the control panel. Very often, translucent red plastic buttons are placed in between the coin return and the coin slot. When they are pressed, a coin or token that has become jammed in the coin mechanism is returned to the player.

The sides of the arcade cabinet are usually decorated with brightly colored stickers or paint, representing the gameplay of their particular game.

The interior of the cabinet holds the arcade system boards, the hardware upon which the game runs, and sometimes an internal power source. The power source's main use is to save high score lists. Older arcade machines would have their high score lists wiped from memory whenever they were unplugged.

Types of cabinets

There are many types of arcade cabinets, some in fact being custom-made for a particular game; however, the most common are the *upright*, the *cocktail* or *table*, and the *sit-down*.

Upright cabinets

Upright cabinets are by far the most common. They are usually made of wood and metal, about six feet or two meters tall, with the control panel set perpendicular to the monitor at slightly above waist level. The monitor is housed inside the cabinet, at approximately eye level. The marquee is above it, and often overhangs it.

Controls are most commonly a joystick for as many players as the game allows, plus action buttons and "player" buttons which serve the same purpose as the start button on console gamepads. Trackballs are sometimes used instead of joysticks, especially in games from the early 1980s. Games such as Smash TV and Battlezone use double joysticks instead of action buttons.

If an upright is housing a driving game, it may have a steering wheel and throttle instead of a joystick and buttons, as well as foot petals attached to the bottom of the machine. If the upright is housing a shooting game, it may have light guns attached to the front of the machine, via durable cables. Some uprights for shooting games have their monitors set a few feet further away than usual, in order to make the game more challenging.

Cocktail or table cabinets

Cocktail cabinets are shaped like low, rectangular tables, with the controls set at either of the longer ends, and the monitor inside the table, the screen facing upward. Two player games housed in cocktails were usually alternating, each player taking turns. The monitor reverses its orientation for each player, so that everything seems right-side-up from their perspective. This requires special programming of the cocktail versions of the game.

Cocktail cabinet versions were usually released alongside the upright version of the same game. They were relatively common in the 1980s, especially during the Golden Age of Arcade Games, but have since lost popularity. Their main advantage over upright cabinets was their smaller size, making them less obtrusive.

Recently companies such as Digital Tables have re-introduced modern versions of the classic cocktail cabinet.

Sit-down cabinets

Most commonly used for games involving vehicles, such as flight simulators and racing games, these cabinets typically resemble the controls of a vehicle. Driving games may have a bucket seat, foot pedals, a stick shift and even an ignition, while flight simulators may have a flight yoke or joystick, and motorcycle games handle bars and a seat shaped like a full-size bike. Often, these cabinets are arranged side-by-side, to allow players to compete together. Some of these cabinets are very elaborate, and include hydraulics which move the player according to the action on screen. Sega is among the largest manufacturers of these kinds of cabinets.

Cockpit/Environmental cabinets

These are a close relative to the sit-down style of cabinet except that the player sits **inside** the game. Examples of this can be seen on the Killer List of Videogames for games such as Star Wars, Sinistar or Discs of Tron.

Mini cabinets

The *mini* or *cabaret* is a shorter version of the upright cabinet. It also has a smaller monitor. Mini cabinets save space and are easier for small children to play than some full-size cabinets.

Countertop cabinets

Countertop or *bartop* cabinets are not much larger than necessary to house their monitors and control panels. They are often used for trivia and gambling-type games, and are usually found installed on bars or tables in pubs and restaurants.

Restoration

Since arcade games are becoming increasingly popular as collectibles, an entire niche industry has sprung up focussed on arcade cabinet restoration. There are many websites (both commercial and hobbyist) and newsgroups devoted to arcade cabinet restoration. They are full of tips and advice on restoring games to mint condition.

Artwork

Often game cabinets were used to host a variety of games. Often after the game's initial game was removed and replaced with another, the cabinet's side art was painted over (usually black) so that the cabinet wouldn't misconstrue the game contained within. The side art was also painted over to hide damaged or faded artwork.

Of course, hobbyists prefer cabinets with original artwork in the best possible condition. Since machines with good quality art are hard to find, one of the first tasks is stripping any old artwork or paint from the cabinet. This is done with conventional chemical paint strippers or by sanding (preferences vary). Normally artwork cannot be preserved that has been painted over and is removed with any covering paint. New paint can be applied in any manner preferred (roller, brush, spray). Paint used is often just conventional paint with a finish matching the cabinet's original paint.

Many games had artwork which was silkscreened directly on the cabinets. Others used large decals for the side art. Some manufacturers produce replication artwork for popular classic games—each varying in quality. This side art can be applied over the new paint after it has dried. These appliques can be very large and must be carefully applied to avoid bubbles or wrinkles from developing. Spraying the surface with a bit of Windex allows the artwork to adhere to the surface but also be quickly repositioned if a wrinkle or bubble develops.

Control panels, bezels, marquees

Acquiring these pieces is harder than installing them. Many hobbyists trade these items via newsgroups or sites such as eBay (the same is true for side art). As with side art, some replication art shops also produce replication artwork for these pieces that is indistinguishable from original. Some even surpass the originals in quality. Once these pieces are acquired, they usually snap right into place.

If the controls are worn and need replacing, if the game is popular, they can be easily obtained. Rarer game controls are harder to come by, but some shops, such as Arcade Renovations, stock replacement controls for classic arcade games. Some shops manufacture controls that are more robust than originals and fit a variety of machines. Installing them takes some experimentation for novices, but are usually not too difficult to place.

Monitors

Raster monitors are easier to service than vector monitors. Normally, unless the main tube is blown, a raster monitor will provide good display characteristics with perhaps a few minor color adjustments. Vector monitors, on the other hand, can be challenging or very costly to service, and some can't be repaired at all (they have dwindled in use since the 80s and parts are hard to come by). Sometimes they will have to be replaced completely, but even finding replacement monitors is difficult since few, if any, are produced any longer.

Some electronic components are stressed by the hot, cramped conditions inside a cabinet. Electrolytic capacitors are sensitive to these conditions, and in many arcade cabinets, their service life is nearing the end. If a game has its original raster monitor, it will usually need to be "capped" — that is, some capacitors will need to be replaced so the monitor will deliver a proper image. Due to the size of the capacitors and the voltages present inside a video monitor, this can be a dangerous activity and should only be attempted by experienced hobbyists or professionals. If a monitor is flat-out broken, a replacement can usually be obtained via the Internet (newsgroups, eBay, etc.).

Wiring

If a cabinet needs rewiring, some wiring kits are available over the Internet. An experienced hobbyist can usually solve most wiring problems through trial and error.

Many cabinets are converted to be used to host a game other than the original. In these cases, if both games conform to the JAMMA standard, this is a snap. Other conversions can be more difficult, but some manufacturers such as Nintendo have produced kits to ease the conversion process (Nintendo manufactured kits to convert a cabinet from Classic wiring to VS. wiring).

Scratch built

Some cabinets are constructed entirely by hobbists to mimic an arcade cabinet using emulators such as MAME and a PC to replace the game hardware. These home built cabinets have many of the features of real arcade cabinets (such as a coin box, marquees etc.), often a MAME arcade unit combines several arcade controls (such as two types of joysticks and a trackball) in one unit to enable play of many different games.

References

1. *The Official Price Guide to Classic Video Games* (ISBN 0375720383) by David Ellis

See also

- Arcade game
- Video arcade

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List of Arcade Games

This is a **list of arcade games** organized alphabetically by name. It does not include computer or console games unless they were also released in video arcades. See list of computer and video games for related lists.

0-9

'88 Games
'99 The Last War
005
10 Pin Deluxe
10-Yard Fight
18 Wheeler
1941: Counter-Attack
1942
1943 Kai
1943: The Battle of Midway
1944: The Loop Master
19th Hole
19XX: The War Against Destiny
2020 Super Baseball
21 Blackjack
280 ZZZAP
3 Count Bout
3 Cushion Billiard
3 On 3 Dunk Madness
3-D Bowling
3DDX
4-D Warriors
4-Player Bowling Alley
40-0
500cc GP
64th Street: A Detective Story
720°
8 Ball Action
800 Fathoms
9 Ball Shootout!

A

A.P.B.
Aa Eikou No Koshien
AAArgh!
AB Cop
Ab$cam
Ace
Ace Driver

Ace Driver Victory Lap
Acrobat
Acrobat Mission
Act-Fancer: Cybernetick Hyper Weapon
Action Fighter
Action Pac
Adventure Island
Adventure Quiz 2: Hatena? no Daibouken
Adventure Quiz: Capcom World
Adventures of Major Havoc
The Adventures of Robby Roto!
Aero Fighters (US) / Sonic Wings (Japan) series
Aeroboto
After Burner
After Burner II
Aggressors of Dark Kombat
Air Assault
Air Buster
Air Combat
Air Combat (1976)
Air Combat 22
Air Duel
Air Gallet
Air Inferno
Air Raid
Air Rescue
Air Strike
Air Trix
Airline Pilots
Airwolf
Ajax
Akka Arrh
Akkanvader
Akuma
Akumajou Dracula
Akuu Gallet
Albegas
Alcon
Ales no Tsubasa: The Legendary Soldiers
Aleste 2
Alex Kidd: The Lost Stars
Ali Baba and the 40 Thieves
Alice in Wonderland
Alien 3: The Gun

Alien Arena
Alien Crush
Alien Invader
Alien Invasion Part II
Alien Storm
Alien Syndrome
Alien vs. Predator
Aliens
All American Football
All-Japan Pro Wrestling featuring Virtua
Alley Master
Alley Rally
Alligator Hunt
Alpha 1 (Prototype)
Alpha Mission
Alpha Mission II
Alpine Racer
Alpine Racer 2
Alpine Ski
Alpine Surfer
Altered Beast
Amatelass
The Amazing Maze Game
Amazon
Ambush
Ameri Darts
American Football
American Horseshoes
American Speedway
Amidar
Amman De Pinky
Andro Dunos
Angel Eyes
Angel Kids
Angler Dangler
Anime Champ
Antarctic Adventure
Anteater
Anti-Aircraft II
Apache 3
Apparel Night
Appoooh
Aqua Jack
Aqua Jet

Aquarium
Arabian
Arabian Fight
Arabian Magic
Arbalester
Arc Area
Arcade Classics
Arch Rivals
Arctic Thunder
Area 51
Area 51: Site 4
Area 88 (Japan) / UN Squadron (US)
Arkanoid
Arkanoid Returns
Arkanoid: Revenge of Doh
Arlington Horse Racing
Arm Champs
Arm Champs II
Arm Wrestling
Armadillo Racing
Armed Formation F
Armed Police BatRider
Armor Attack
Armored Attack
Armored Warriors
Arrow Bingo
Art of Fighting series
Ashita no Joe Densetsu
Ashita Tenki Ninaare
Ashura Blaster
ASO
ASO II: Last Guardian
Assassin
Assault
Assault Plus
Asterix
Asteroids
Asteroids Deluxe
Astra Super Stars
Astro Battle
Astro Blaster
Astro Chase
Astro Fantasia
Astro Fighter

Astro Invader
Astro Race
Astrohockey
Astron Belt
The Astyanax
Asuka & Asuka
Asura Blade: Sword Of Dynasty
Asura Buster: Eternal Warriors
Asylum
Ataxx
Athena
Athena No Hatena?
The Athlete
Atomic Boy
Atomic Castle
Atomic Point
Atomic Punk
Atomic Punk 2: Global Quest
Atomic Robo-Kid
Attack
Attack of the Zolgear
Aurail
Auto Test
AV2 Mahjong No. 2: Rouge no Kaori
AV2 Mahjong No1 Bay Bridge No Seijo
Avalanche
Avenger
Avengers
Avengers in Galactic Storm
Avenging Spirit
Aztarac
Azumanga Daioh Puzzle Bobble
Azurian Attack

B

B-Wings
B. Rap Boys
B.O.T.S.S.
Baby Pac-Man
Back Fire
Back Street Soccer
Backfire!

Bad Dudes
Badlands
Bagman
Bakatonosama Majong Manyuuki
Baku Baku Animal
Bakumatsu Roman Daini Tobari: Gekka no Kenshi
Bakumatsu Roman: Gekka no Kenshi
Bakuretsu Breaker
Bakuretsu Crash Race
Bakuretsu Quiz Ma-Q Dai Bouken
Bal Cube
Ball Park
Ball Park II
Balloon Bomber
Balloon Brothers
Balloon Fight
Baluba-Louk No Densetsu
Bandido
Bang Bang Ball
Bang Bead
Bang!
Bank Panic
BaRaDuke
Baraduke 2
Barracuda
Barricade
Barricade II
Barrier
Baseball Stars 2
Baseball Stars Professional
Baseball The Season II
Bases Loaded
Basketball
Bass Angler
Batman
Batman Forever: The Arcade Game
Batsugun
Battlantis
Battle of Atlantis
Battle Arena Toshinden 2
Battle Bakraid
Battle Balls
Battle Bird
Battle Blaze

Battle Chopper
Battle Circuit
Battle City
Battle Climaxx!
Battle Cross
Battle Cruiser M-12
Battle Field
Battle Garegga
Battle Gear series
Battle K-Road
Battle Lane Vol. 5
Battle Shark
Battle Station
Battle Tryst
Battle Vision
Battle Vision (Prototype)
Battle Wings
The Battle-Road
BattleCry
Battletech
Battletoads
Battlezone
Bay Route
Bazooka
Beach Head 2000
Beach Spikers
Beast Busters
Beast Busters: Second Nightmare
Beastie Feastie
Beastorizer
Beastorizer 2
Beat Head
Beat Player 2000
Beat The Champ
beatmania series
beatmaniaIIDX series
Beezer
Bega's Battle
Ben Bero Bee
Ben Hur (arcade game)Ben Hur
Beraboh Man
The Berlin Wall
Bermuda Triangle
Berzerk

Best Bout Boxing
The Big Apple
Big Buck Hunter
Big Bucks Trivia
Big Bucks Trivia Quest
Big Event Golf
Big Karnak
The Big One
The Big Pro Wrestling!
Big Run
Big Striker
Big Tournament Golf
Big Twin
Bigfoot Bonkers
Bijokko Gakuen
Bijokko Yume Monogatari
Billiard Academy Real Break
Bio F.R.E.A.K.S.
Biomechanical Toy
Bionic Commando (US) / Top Secret (Japan)
Bio-Attack
Bio-Hazard Battle
Bio-ship Paladin
BiPlane
BiPlane 4
Birdie King
Birdie King 2
Birdie King 3
Birdie Try
Birdiy
Bishoujo Janshi Pretty Sailor 18-kin
Bishoujo Janshi Pretty Sailor 2
Bishoujo Senshi Sailor Moon
Blacklight Bowling for Jackpots
Black Dragon
Black Heart
Black Hole
Black Panther
Black Tiger (US) / Black Dragon (Japan)
Black Widow
Blade Master
Blade of Honor
Blades of Steel
Blandia

Blast Off
Blasted
Blaster
Blasteroids
Blasto
Blazeon
Blazer
Blazing Star
Blazing Tornado
Block Block
Block Carnival
Block Fiber
Block Gal
Block Game
Block Hole
Block Out
Blockade
Blocken
Blomby Car
Blood Brothers
Blood Warrior
BloodStorm
Bloody Roar 3
Bloody Wolf
Blox
Bloxeed
Blue Hawk
Blue Print
Blue Shark
Blue's Journey
BMX Heat
Boardwalk Casino
Body Slam
Bogey Manor
Bomb Bee
Bomb Jack
Bomb Jack Twin
Bomberman
Bomberman World
Bomberman: Panic Bomber
Bombs Away
Bonanza Bros.
Bonk's Adventure (US) / B.C. Kid (World) / Kyukyoku PC Genjin (Japan)

Bonze Adventure
Boogie Wings
Boomer Rang'r
Boomerang
Boong-Ga Boong-Ga
Boot Camp
Boot Hill
Border Down
Borderline
Borench
Bosconian
Bottom of the Ninth
Boulder Dash
Bouncer
Bouncing Balls
The Bounty
Bowl-O-Rama
Bowling Alley
Boxing
Boxing Bugs
Boxing Mania: Ashita no Joe
Boxy Boy
Brabo-Man
Brain
Brave Blade
Brave FireFighters
Breakers
Breakers Revenge
Breakout
BreakThru (US) / Kyohkoh-Toppa (Japan)
Bristles
Brix
Brute Force
Bubble 2000
Bubble Bobble
Bubble Memories
Bubble Puzzle 97
Bubble Symphony
Bubble Trouble: Golly! Ghost! 2
Bubbles
Buck Rogers: Planet of Zoom
Bucky O'Hare
Bug Busters
Buggy Boy / Speed Buggy

Buggy Challenge
Bull Fight
Bull Fighter
Bulls Eye Darts
Bump 'n' Jump (US) / Burnin' Rubber (Japan)
Burgertime
Burglar X
Buriki One: World Grapple Tournament '99 in Tokyo
Burning Fight
Burning Force
Burning Rival
Burning Rush
Bust-A-Move (US) / Puzzle Bobble (Japan) series
Buster Bros. (US) / Pang (World) / Pomping World (Japan)
Buster Buddies
Butasan

C

Cabal
Cachat
Cadash
Cadillacs & Dinosaurs
Cadillacs Kyouryuu-Shinseiki
Cafe Break
Cal.50
California Chase
California Speed
Calipso
Calorie Vs. Moguranian
Cameltry
Cannon Ball
Cannon Spike
Canyon Bomber
Capcom Fighting All-Stars
Capcom Fighting Jam
Capcom Golf
Capcom Sports Club
Capcom vs. SNK 2
Capcom World 2
Capsule Invader
Captain America and the Avengers
Captain Commando

Captain Silver
Captain Tomaday
Captain Zapp
Car Hunt
CarnEvil
Carnival
Centipede
Chack'n Pop
Chain Reaction (World) / Magical Drop (Japan)
Chase HQ
Cheyenne
Chiller
Choplifter
Circus Charlie
Cisco Heat
City Connection
Cloak & Dagger
Clu Clu Land
Club Kart
Columns
Combat
Computer Space
Congo Bongo
Continental Circus
Contra
Commando
Counter-Strike Neo
Crazy Climber
Crazy Taxi
Crazy 8's
Crisis Zone
Crossbow
Cruis'n Exotica
Cruis'n USA
Cruis'n World
Crush Roller (Japan) / Make Trax (World)
Crystal Castles
Cyberball
Cyclone

D

Dance Dance Revolution series

Dance Freaks / Dance Maniax
Dancing Stage
Darius series
Dark Stalkers: The Night Warriors (World) / Vampire: The Night Warriors (Japan)
Daytona USA series
Dead or Alive
Death Race
Deep Freeze
Defender
Derby Owners Club
Devil World
Diamond Run
Die Hard Arcade
Dig Dug
Dig Dug II
Discs of Tron
DoDonpachi
Domino Man
Don Doko Don
Donkey Kong
Donkey Kong Jr.
Donkey Kong 3
Double Dragon
Double Dribble
Dragon Breed
Dragon's Lair
Dragon's Lair II: Time Warp
DrumMania series
Duck Hunt
Dungeons & Dragons: Shadow over Mystara
Dungeons & Dragons: Tower of Doom
Dynamite Cop
Dynowarz

E

Eagle
Eco Fighters
Egg Venture
Ehrgeiz
Elevator Action
Empire Strikes Back

Excitebike
Eyes
EZ2Dancer
EZ2DJ

F

F-1 Race
F-Zero AX
Fairyland Story
Fantasy Zone
The Fast and the Furious
Fatal Fury
Ferrari F355 Challenge
Fighter's History
Fighting Vipers
Final Fight
Final Fight Revenge
Final Lap
Flicky
Flipull/Plotting
Flying Shark
Food Fight
Forgotten Worlds
Frenzy
Frogger
Fun-E-Ball

G

G-LOC
Galaga
Galaga '88
Galaxian
Galaxian3
Gals Panic series
GameTap
Gaplus
Garou: Mark of the Wolves
Gauntlet
Gauntlet II
Gauntlet Legends

Gauntlet: Dark Legacy
Ghost Squad
Ghosts 'n Goblins
Ghouls 'n Ghosts
Giga Wing
Golden Axe
Golden Tee Golf series
Goonies
Gorf
Gradius
Gravitar (arcade game)
The Grid
Guerrilla War
Guilty Gear series
GuitarFreaks
Gunbird
Gun Fight
Gun Smoke
Guwange
Gyruss

H

Hang-On
Hangly-Man
Hard Drivin'
Hard Head series
Haunted Castle
Head On
Heavy Barrel
Hogan's Alley
HoldOffRed
Hot Chase
House of the Dead
House of the Dead 2
House of the Dead III
Hunchback
Hydra
Hydro Thunder
Hyperbowl

I

I'm Sorry
I, Robot
Ibara
Ice Climber
Idol Mahjong Final Romance
Idol Mahjong Housoukyoku
The Idol Master
Iemoto
Iga Ninjutsuden
IGMO
Ikari III: The Rescue
Ikari Warriors
Ikaruga
Ikki
Image Fight
Image Fight II
Imekura Mahjong
Indiana Jones and the Temple of Doom
In The Groove
In The Groove 2
In the Hunt
Indian Battle
Indianapolis 500
Indoor Soccer
Indy 4
Indy 500
Indy 800
Inferno
Initial D Arcade Stage
Innocent Sweeper: Silent Scope 2
Insector
Insector X
Interceptor
Interstellar
Intrepid
Intruder
Invader Wars
Invader's Revenge
Invaders 2000
The Invaders
Invasion: The Abductors
Invinco!
IPM Invader
The Irem Skins Game

Iron Horse
Ironman Ivan Stewart's Super Off Road
Ironman Ivan Stewart's Super Off Road Track Pak
The Irritating Maze
Ixion

J

John Elway's Quarterback
Johnny Nero: Action Hero
Joust
Joust 2: Survival of the Fittest
Jr. Pac Man
Jungle Hunt / Jungle King
Jurassic Park
Jurassic Park III

K

Kangaroo
Karate Champ
Karnov
Keyboardmania
Kick harness
Kid Chameleon
Killer Instinct series
King of Fighters
King of Monsters
Klax
Kung Fu Master

L

Ladybug
The Last Blade
Lethal Enforcers
Liberator
Life Force
Lode Runner
The Lost World: Jurassic Park
Lunar Lander

M

Mace: The Dark Age
Mach Rider
Magic Sword
Magical Drop (Japan) / Chain Reaction (World)
Magician Lord
Major Havoc
Make Trax (World) / Crush Roller (Japan)
Mambo A Go Go
Mappy
Marble Madness
Mario Bros.
Mario Kart Arcade GP
Mars Matrix
Martial Champion
Marvel Land
Marvel Super Heroes
Mech Warrior
Mega Man: The Power Battle
Mega Man 2: The Power Fighters
Melty Blood
Merry Rainbow
Metal Black
Metal Slug
Metal Slug 2
Metal Slug 3
Metal Slug X
Metal Slug 4
Metal Slug 5
Metro Cross
Michael Jackson's Moonwalker
Millipede
Missile Command
Missing in Action
Mocap Boxing
Momoko 120 percent
Monster Maulers (Kyukyoku Sentai Dandadarn)
Moon Patrol
Mortal Kombat series
Mouse Trap
Mr. Do!
Mr. Do's Castle

Mr. Driller
Ms. Pac-Man
Mushiking
Mystic Marathon

N

NARC
NBA Jam
NBA Showtime NBA on NBC
Need for Speed: Underground
Nekketsu Koha Kunio Kun (Japan) / Renegade (World)
New Zealand Story
NFL Blitz
Night Driver
Nightmare On Elm Street
Ninja Gaiden (US) / Ninja Ryukenden (Japan) / Shadow Warriors (World)

O

Operation Thunderbolt
Operation Wolf
Out Run
Out Zone
OutRun 2
OutRunners
Over Top

P

Pac-Land
Pac-Man
Pac-Mania
Pac-Man Plus
Pachinko Sexy Reaction
Pang (World) / Buster Bros. (US) / Pomping World (Japan)
Panic Park
Paperboy
ParaParaParadise
Parodius

Parasol Stars
Pengo
Phoenix
Pigskin 621 A.D.
Pinball
Pit-Fighter
Pitfall II
Plaque Attack
PlayChoice-10
Pocket Fighter (Japan) / Super Gem Fighter: Mini Mix (World)
Point Blank
Polaris
Pole Position
Pole Position II
Police 911
Police 911 2
Pong
Ponpoko
Pooyan
Pop'n Music
Popeye
Power Drift
Power Instinct
Power Instinct 2
Power Instinct Legends
Power Instinct 3: Groove-On Fight
Power Instinct Matrimelee
Power Stone
Power Stone 2
The Powerpuff Girls
Primal Rage
Professor Pac-Man
Progear no Arashi
Project Justice
Prop Cycle
Psyvariar
Psyvariar 2
Pump It Up series
Punch-Out!!
Purikura
Puyo Puyo
Puzzle Bobble (Japan) / Bust A Move (US)
Puzznic

Q

Qix
Q*Bert
Quartet
Quiz Magic Academy series

R

R-360
R-Type
Radar Scope
Radiant Silvergun
Rage of the Dragons
Raiden series
Rainbow Islands
Rally-X
Rampage
Rampage World Tour
Rampart
Raptor Captor
Rastan
Rastan Saga
Raster Blaster
RBI Baseball
Re-Volt
Reactor
Red Baron
Red Earth (a.k.a. Warzards)
Renegade (World) / Nekketsu Koha Kunio-Kun (Japan)
Resident Evil Survivor 2 - Code: Veronica
Revolution X
Ridge Racer series
Rival Schools
Road Fighter
RoadBlasters
Road Runner
Robotron: 2084
Rolling Thunder
Root Beer Tapper
Rush'n Attack
Rygar

S

S.T.U.N. Runner
Salamander
Samba de Amigo
Samurai Shodown
San Francisco Rush
San Francisco Rush 2049
Saturday Night Slam Masters
Scramble
Sea Wolf
Sega Rally Championship
SegaSonic the Hedgehog
Sengoku
Senko no Ronde
The Simpsons
Shadow Dancer
Shadow Warriors (World) / Ninja Gaiden (US) / Ninja Ryukenden (Japan)
Shikigami No Shiro
Shikigami No Shiro II
Shikigami No Shiro III
Shinobi
Shock Troopers
Sidearms
Silent Scope
Sinistar
Skee ball
Slalom
Smash TV
Smashing Drive
Smokin' Token
Snow Bros
Solomon's Key
Sonic Blast Man
Sonic Championship
SonSon
Soul Calibur
Soul Calibur II
Soul Edge
Space Ace
Space Duel
Space Gun

Space Harrier
Space Invaders
Space Wars
Splatterhouse
Spectar
Speed Racer
Spelunker
Spheres of Chaos
Spider-Man
Spiders
Spy Hunter
Star Castle
Star Trek
Star Wars
Stargate
Starhawk
Street Fighter series
Strider series
S.T.U.N. Runner
Sundance
Super Cobra
Super Contra
Super Dodge Ball
Super Hang-on
Super Mario Bros. (available on PlayChoice-10; see also Vs. Super Mario Bros.)
Super Monkey Ball
Super Pac-Man
Super Punch-Out!!
Super Puzzle Fighter II Turbo
Super Shot
Super Sprint
Survivor

T

Taiko: Drum Master
Tank
Tapper
Targ
Tech Romancer
Teddy Boy
Teenage Mutant Ninja Turtles series

Target: Terror
Tekken series (1, 2, 3, Tag Tournament, 4, 5)
Tempest
Terminator 2: Judgement Day
Tetris series
Thief
Tiger Heli
Timber
Time Crisis series
Time Pilot
Time Soldiers
Time Traveler
Tokyo Cop
Total Carnage
Tower of Druaga
Tower of Power
Track and Field
Trio The Punch - Never Forget Me...
Tron
Truxton
Turbo Outrun
Tux Racer
Twin Bee
Twin Cobra

U

UltraCade
Urban Champion

V

Vanguard
Valve Limit
Vendetta
Venture
Virtua Cop series
Virtua Fighter series
Virtua Racing
Virtua Striker series
Virtua Tennis
Virtual On

Vs. Super Mario Bros. (See also: Nintendo Vs. Series)

W

Wangan Midnight Maximum Tune
Warlords
Warp Warp
Warriors of Fate
Whac-A-Mole
Whistle Stop
Who Dunit
Wild Gunman
Wild Riders
Willow
Wizard of Wor
Wonder Boy
Wonder Boy in Monster Land
Wonder Momo
Wrecking Crew
Wrestle War
WWF Wrestlefest
WWF Superstars
WWF Wrestlemania

X

X Multiply
X-Men
X-Men: Children of the Atom
X-Men VS. Street Fighter
Xain'd Sleena
Xantia Elite
Xenon
Xenophobe
Xevious
Xexex
Xtom 3D
Xtreme Rally
XX Mission
Xybots

Y

Yam! Yam!?
Yamato
Yie-Ar Kung Fu
Yomaninbocho
Youjuden
Youkai Douchuuki
Youlide-Chui Nu
Youma Ninpou Chou
Yukiwo

Z

Zanac
Zaxxon
Zed Blade
Zektor
Zero Gunner
Zero Gunner 2
Zero Point
Zero Point
Zero Point 2
Zero Team
Zero Wing
Zero Zone
Zing Zing Zip
Zippy Race
Zoar
Zodiack
Zoids Card Colosseum
Zoids Infinity
Zombie Raid
Zombie Revenge
Zzyzzyxx
Zone Hunter
Zoo Keeper
Zool
Zoom, Zoom
Zun Zun Block
Zunzunkyou No Yabou
Zupapa

Home | Up

Computer and Video Games

A **computer game** is a computer-controlled game that players may interact with. A **video game** is a computer game where a video display such as a monitor or television is the primary feedback device. These terms are not always interchangeable as some games, particularly older games, do not use a video display. Usually there are rules and goals, but in more open-ended games the player may be free to do whatever they like within the confines of the virtual universe.

The phrase **interactive entertainment** is the formal reference to computer and video games. To avoid ambiguity, this game software is referred to as "*computer and video games*" throughout this article, which explores things common to both types of game.

In common usage, "computer game" or "PC game" refers specifically to games played on a personal computer, "console game" refers to games played on specifically-designed set top box, that play through a TV and "video game" (or "videogame") refers to any game played on a device that plays through your TV but also includes PC, Console, Mobile Phone or PDA or other handheld device.

- *For specific information regarding "computer games", see personal computer game.*
- *For specific information regarding "console games" or, see console game.*

History

Main articles: History of computer and video games

The first primitive computer and video games were developed in the 1950s and 1960s and ran on platforms such as oscilloscopes, university mainframes and EDSAC computers. Arcade games were developed in the 1970s (Pac-man to Frogger) and led to the so-called "Golden Age of Arcade Games". One of the most well-known of these games is *Pong*.

The 1970s also saw the release of the first home video game consoles.The first home console video games, were created by Ralph Baer who is now known as the creator of video games. He created a system with limited capabilities called the brown box, which paved the way for the next wave of home consoles. The late 1970s to early 1980s brought about the improvement of home consoles and the release of the Atari 2600, Intellivision and Colecovision. The video game crash of 1983, however, produced a *dark age* in the market that was not filled until the Nintendo Entertainment System (NES) reached North America in 1985.This presented Americans with games such as Mario Bros. and many others of todays popular Nintendo genre. The last two decades of game history have been marked by separate markets for games on video game consoles, home computers and handhelds. See the article on Console wars for additional information on that facet of game history.

The future of console gaming

The end of 2005 and first and second quarters of 2006 will see the next generation of console gaming in the form of continuing advances in processor technology, graphics technology, design innovation, and even platform specific gaming community infrastructure. Sony with the PlayStation 3, Nintendo with the Revolution, and Microsoft with the Xbox 360 are all participating in this coming year's "technology race". The second generation Microsoft offering, the Xbox 360, will be powered by a multi-core CPU, the PlayStation 3 will be powered by Cell processor technology, and the Nintendo Revolution will allow the gamer to interact with the game via a wireless motion sensing controller, although full technical specifications are yet to be revealed.

Gameplay

Main article: Gameplay

In computer and video gaming, gameplay (sometimes called "Game_mechanic.html") is a general term that describes player interaction with a game. It includes direct interaction, such as controls and interface, but also design aspects of the game, such as levels and graphics.

Although the use of this term is often disputed, as it is considered too vague for the range of concepts it describes, it is currently the most commonly used and accepted term for this purpose when describing video games.

Genres

Main article: Computer and video game genres

Games, like most other forms of media, may be categorized into genres based on gameplay, atmosphere, and various other factors.

The most common genres in use today include platformers, adventure, role-playing games (RPGs), first person shooters (FPS), third person shooter (sometimes called shoot 'em ups), sports, racing, fighting (sometimes called beat 'em ups), action (although this term is abused often), puzzle(which often aren't that adventurous), simulation, and real time strategy (RTS), to name a few. It is rare that a game will fall purely into one genre, most games are a combination of two or more genres (e.g action/RPG). Although most genres have 2D counterparts, they are for the most part considered entirely different genres because of the differences in the way 2D and 3D games are played (e.g. Super Mario Bros. and Super Mario 64). The first falls into a Platforming/Adventure genre, while the latter falls under adventure/Rpg.

The increase in the popularity of online gaming has also resulted in new sub-genres being formed, such as the massively multiplayer online role-playing game (MMORPG).

Gaming platforms

Today there are many different devices, or platforms, on which games may be played. Personal computers, consoles, handheld systems, and arcade machines are all common. Games are not interchangeable between platforms so, for example, Xbox games will not work in your PC. The 3 main home video game platform companies are Nintendo, Microsoft, and Sony, who between them have created seven of the eight home platforms most commonly used today. The final home platform is the PC.

Many games intended for PCs are now just as prevalent on consoles, with many developers creating versions for more than one platform. During the last generation of gaming, most major PC game releases have coincided with the release of console versions, and titles initially developed for a single platform are often *ported* to others if they prove to be successful.

Personal Computer

Main article: Personal Computer Games

Personal computer games are commonly referred to as "computer games" or "PC games". They are played on the personal computer with standard computer interface devices such as the keyboard and mouse, or additional peripherals, such as joysticks. Video feedback is received by the user through the computer screen, sound through speakers or headphones. PC games are often more detailed than console games because of early market releases of their external architecture and graphics cards.

Today, most major PC games require a recent version of the Windows operating system to be installed on the computer. There is, however, a continuing movement to get the most popular games to run under the Mac and Linux operating systems, although it is still small.

According to the Entertainment Software Association, console games have outsold computer games roughly four units to one in 2003 and 2004 [1]. For more information.

One possible explanation for the declining sales of personal computer games in relation to that of consoles can be found within the PC itself: a computer must meet certain minimum requirements such as CPU speed, Random access memory (RAM), system clock speed (MHz or GHz), video card memory, hard drive space, operating system, Internet connection speed (for online games) and other criteria. Without the proper hardware, the game may perform poorly or not run at all. Ease of software piracy is also a much greater threat with PC games, although console hardware modifications do make it possible to play pirated games on them as well.

Internet

Main article: Internet gaming

Online Games are those which are played over the Internet. Online gaming began with PC games, but has expanded over time to include most modern consoles. It is now a key feature of modern games, with the inclusion of Internet connectivity in consoles such as the PlayStation 2, Xbox and Gamecube (limited in the Gamecube's case); portable consoles such as PSP or DS that use Wi-Fi, and in mobile/ cellular phones. Online games need to allow several people to play at the same time, so not all genres are suitable; the most popular genres include MMORPGs, FPSs, racing/driving games, strategy games, and sports titles.

The Internet is also host to thousands of small web-based games, written using formats like Flash and Javascript. These games generally do not share the same magnitude of development costs, depth, or seriousness of PC and console games, and are generally quick to complete by comparison. Some of these games, such as Runescape, however, have expanded far beyond this, and can often be considered on the same level as "mainstream" PC games.

Console

Main article: Console games

Console games are played on a video game console,or "home console", a specialized computer specifically designed to play games of a certain format. The player usually interacts with the game through a controller, and video and sound are typically delivered to the player via a television, although most modern consoles support additional outputs, such as surround soundand Hi-Def setups.

Consoles themselves branched off from personal computers around two decades ago, a fact which is still evident not only in the name, but also in many of the peripherals available for many consoles, like the keyboard and mouse peripherals released for the Sony PlayStation 2 and the Sega Dreamcast.

Handheld

Main article: Handheld video games

Handheld games are played on handheld game consoles, such as the Nintendo Game Boy Advance, the Nintendo DS, the Sony PSP, and the Nintendo Game Boy. Handheld consoles act as their own controllers, which the player uses to interact with the game, as well as having in-built display and audio output devices. Because they are designed to be played on the go, they were traditionally small enough to carry conveniently in a bag or jacket (the Virtual Boy being an exception to this), but due to their small size, handheld consoles have reduced processing power compared to larger consoles, meaning that games are shorter, and until the release of the Nintendo DS, were largely limited to 2D.

Arcade

Main article: Arcade Games

Arcade games, traditionally, are "coin-operated games", played on a standalone device originally leased to commercial entertainment venues. These are programmed, equipped, and decorated for a specific game, consisting of a video display, a set of controls, and the coin slot. Controls are similar to those available for many consoles (albeit usually as peripherals) and range from the classic joystick and buttons(Pac-Man), to light guns(Duck Hunt), to pads on the ground that sense pressure(Dance Dance Revolution). Arcade games that are no longer profitable to lease can be purchased by private individuals, many of whom then explore the game dynamics by altering the programs in minor ways.

This term has now expanded to include any game that has more direct action, with fewer long term objectives, focuses on time limits and, for the most part, shorter in-game levels.

Popularity

The popularity of computer and video games, as a whole, has been increasing steadily ever since the 1984-1987 drop-off caused by the video game crash of 1983, and the popularity appears to be continuing to increase. The average age of the video game player is now 30 [2], belying the myth that video games are largely a diversion for teenagers.

Sales

The four largest markets for computer and video games are the United States, Japan, Canada and the United Kingdom. Other significant markets include Spain, Germany, South Korea, France, and Italy. China is not considered a significant market, most likely because an estimated 95% of video games sold in the country are pirated.

Sales of different types of games vary widely between these markets due to local preferences. Japanese consumers avoid computer games and instead buy video games, with a strong preference for games created in Japan, that run on Japanese consoles. In South Korea, computer games are preferred, especially MMORPG games and real-time strategy games; there are over 20,000 PC bang Internet cafes where computer games can be played for an hourly charge.

The NPD Group tracks computer and video game sales in the United States. It reported that as of 2004:

- Console and portable software sales: $6.2 billion, up 8% from 2003
- Console and portable hardware and accessory sales: $3.7 billion, down 35% from 2003
- PC game sales: $1.1 billion, down 2% from 2003

These figures are sales in dollars, not units; unit shipments for each category were higher than the dollar sales numbers indicate, as more software and hardware was sold at reduced prices compared to 2003.

Retail PC game sales have been declining slightly each year since about 1998, but this fact should be taken with a grain of salt: the retail sales numbers from NPD do not include sales from online downloads, nor subscription revenue for games like MMORPGs.

There is a commonly repeated, mistaken belief that video game sales now exceed the revenues of the movie industry. This is untrue; in the United States, video game sales have exceeded the movies' total box office revenue each year since about 1996, but the movie studios trounce the video game publishers when the movies' "ancillary revenue" is counted, meaning sales of DVDs, sales to foreign distributors, and sales to cable TV, satellite TV, and broadcast television networks.

The game and film industries are also becoming increasingly intertwined, with companies like Sony having significant stakes in both. A large number of summer blockbuster films spawn a companion game, often launching at the same time in order to share the marketing costs.

Computer and video games in the broader culture

Computer games are huge business worldwide. Take for example South Korea. Developers there boast MMORPGs such as Lineage and Ragnarok Online with millions of subscribers and a third of the world's MMOG revenue. StarCraft gosu (expert players) are celebrities in a game that some have called the country's national sport. The success of computer and online gaming there is usually credited to South Korea's push for broadband Internet connections in the home and earlier bans on Japanese products (these restrictions were removed by the late 1990s).

Numerous websites and publications devoted solely to games have been created, including Official Xbox Magazine, Nintendo Power, Official US PlayStation Magazine, GamePro, GameSpot, GameSpy, IGN, Amped News, and GameFAQs.

Video gaming is now ingrained in popular culture in the United States. Many T-shirts are available that directly reference video games, such as one with a picture of an NES controller with the text 'Know Your Roots.' Also, video games have also become a major part in cross marketing platforms, such as in Pokémon or Yu-Gi-Oh, where a child can watch the television show, buy the trading cards, and play the various video games available.

Video game properties have had mixed success when migrating to the movies. One of the first films based on a video game property was The Wizard, which some criticized as a 90-minute ad for Super Mario Brothers 3. In the mid-90s, films for Super Mario Brothers, Street Fighter, Wing Commander and Mortal Kombat were released. Reviews have generally been poor.

Despite the ultimately poor performance of these movies, many studios still want to turn big games into movies, hoping that the popularity of the game will help the movie. However, after the initial bunch, many projects materialized that were never finished, but the success of films like Lara Croft: Tomb Raider has led to more films materializing. Doom, a game which film makers were trying to cross over since the mid '90s, finally hit theatres 12 years after its initial release. John Woo is also producing a movie on the popular Nintendo game *Metroid*.

There is still debate in the movie industry on whether video games can consistently be turned into good, profitable movies. Films like Final Fantasy: The Spirits Within, which has received mixed responses from audiences, with some saying it is a great movie, and others saying it is a very bad movie with excellent computer-generated imagery, but ultimately flopped in the box office, and Uwe Boll's House of the Dead and Alone in the Dark, which both ended up being horrible flops both in fan reactions and box office success and both ending up on the IMDB's bottom 100 movies, do not, in turn, give much confidence in whether these movies will be handled seriously. The recently released Final Fantasy VII: Advent Children may change some people's minds though, even though it's a straight to DVD affair.

On the other hand, video games get much more success when adapted into cartoons/animes. Some notable examples of major success includes the various Mario Bros. cartoons, Sonic SatAM, Captain N: The Game Master and Earthworm Jim while Sonic Underground, the American Mega Man cartoon and 4Kids Entertainment's dubs (although this isn't limited to their video game-based dubs) are cited as being poor. Sometime, they even "help" more obscure/Japan-only games pick up popularity in America although rarely; To Heart would be the best example of such thing.

Movies have had far more success moving the other direction, onto video games. Most summer blockbuster films now have a simultaneous video game release; some of the most lucrative video games of recent times are based on movies, such as Electronic Arts' and Stormfront Studios' The Lord of the Rings: The Two Towers and the series of EA LotR games that followed it, and Activision's two Spider-Man movie games.

Even though movies have had more success in game conversion, not all movie games are popular amongst the gaming community. Some publishers believe that the success of the movie will help the game sell, and so may not have as lengthy a development schedule as needed to make a compelling game. Some examples of this are the Catwoman and King Arthur movie games along with the entire television-to-game franchise.

Also, video games have found themselves on MTV2, in a popular(Though for reasons unknown) show called Video Mod, where characters from popular video games perform songs from hit artists, such as characters from The Sims 2 performing the song "Stacy's Mom" by Fountains Of Wayne.

On the Internet, gaming has also become a popular subject of many webcomics. Currently there are two varieties. The first one is the sprite comic, such as 8 Bit Theatre, in which the artist uses sprites from the earlier Final Fantasy games to tell stories. Sometimes these are original stories, but are often parodies of the game in which the sprite came from. The other is a more traditional comic strip, containing original art, like Penny Arcade. Here, the storylines or jokes revolve around current events in video gaming. The success of Penny Arcade has attracted many people in the industry, including Ubisoft. Other parodies have come in the form of amateur videos on Tetris or Ghosts and Goblins, such as those of Mega 64.

Online shows are fast becoming the place to view live action gaming broadcasts such as Gamespot's 'On the Spot'

Controversy

Computer and video games have been the subject of frequent controversy and censorship, due to the depiction of graphic violence, sexual themes, advertising, consumption of illegal drugs, consumption of alcohol or tobacco, propaganda or profanity in some games. Among others, critics of video games sometimes include parents' groups, politicians, organized religion groups, and other special interest groups.

Video game censorship is defined as the use of state or group power to control the playing, distribution, purchase, or sale of video games or computer games. Video game controversy comes in many forms, and censorship is a controversial subject, as well as a popular topic of debate. Proponents and opponents of censorship are often very passionate about their individual views.

Historically, this type of controversy and criticism is not unique to video games. The same situation has been applied to Comic books, music, and motion pictures. Moreover, it appears to be a question of age. Since these art forms have been around longer, the backlash against them occurred farther in the past, beyond the remembrance of today's youth. In both cases, the attempts at censorship in the United States were struck down as a violation of First Amendment rights, and they have gone on to become fully integrated facets of society.

Development

Video games are made by developers, who used to do this as individuals or small teams in the 80's. Now, development commonly requires a large team consisting of designers, graphic designers and other artists, programmers, sound designers, musicians, and other technicians; all of which are managed by producers. The visionary for any game may come from any of the roles outlined. Development by committee rarely works.

Video games are developing fast in all areas, but the problem is of cost, and how developers intend to keep the costs low enough to attract publisher investment. Most video game console development teams number anywhere from 20 to 50 people, with some teams exceeding 100. The average team size as well as the average development time of a game have grown along with the size of the industry and the technology involved in creating games. This has led to regular occurrences of missed deadlines and unfinished products; *Duke Nukem Forever* is the quintessential example of these problems.

Game modifications

Games running on a PC are often designed with end-user modifications in mind, and this consequently allows modern computer games to be modified by gamers without much difficulty. These mods can add an extra dimension of replayability and interest. The Internet provides an inexpensive medium to promote and distribute mods, and they have become an increasingly important factor in the commercial success of some games. Developers such as id, Valve, and Epic ship their games with the very development tools used to make the game in the first place, along with documentation to assist mod developers, which allows for the kind of success seen by popular mods such as *Counter-Strike*.

Popular mods are very occasionally bought by the developers of the game. This was the case with Valve's *Half-Life*. Valve bought a number of popular mods including *Counter-Strike* and Day of Defeat. After the release of Half-Life 2 Valve developed these mods for the sequel and sold them through their Internet digital distribution software, Steam.

Recently, computer games have also been used as a digital art medium. See artistic computer game modification.

Naming

Non-gamers use several umbrella terms for console, PC, arcade, handheld, and similar games since they do not agree on the best name. For many, either "computer game" or "video game" describes these games as a whole. Other commonly used terms include "entertainment software," "interactive entertainment media," "electronic interactive entertainment," "electronic game," "software game," and "videogame" (as one word). Gamers are quite happy to use the vague term "games", or "videogame/video game" to distinguish them from board games and card games when necessary.

Computer and video games are a subset of interactive media, which includes virtual reality, flight and engineering simulation, multimedia and the World Wide Web.

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History of Computer and Video Games

Although the **history of computer and video games** spans almost five decades, computer and video games themselves did not become part of the popular culture until the late 1970s.

The 1950s

Three people are usually cited as the sole inventors of video games. The first is television engineer Ralph Baer, who conceived the idea of an interactive television while employed by Loral Electronics in 1951 in Bronx, New York. No game was produced because his employer rejected the design, but he continued this early work 15 years later.

A.S. Douglas developed OXO, a graphical version of noughts and crosses (tic-tac-toe), in 1952 at the University of Cambridge in order to demonstrate his thesis on human-computer interaction. It was played on the now archaic EDSAC computer, which used a cathode ray tube for a visual display. In spite of its technological antiquity, the game is still playable on an emulator available on the Internet. *OXO* is the first known graphical game to run on a computer.

Many people attribute the invention of the video game to William Higinbotham, who, in 1958 created a game called Tennis for Two on an oscilloscope to entertain visitors at Brookhaven National Laboratory in New York. Unlike Pong and similar early games, Tennis for Two shows a simplified tennis court from the side. The ball is affected by gravity and must be played over the net. The game is played with two bulky controllers each equipped with a knob for trajectory and a button for firing the ball over the net. Tennis for Two was exhibited for two seasons before its dismantling in 1959.

The 1960s

Many of the earliest computer games ran on university mainframes in the United States and were developed by individual users who programmed them in their idle time. However, the limited accessibility of early computer hardware meant that these games were few and easily forgotten by posterity.

In 1961, a group of students at MIT, including Steve Russell, programmed a game called Spacewar on the then-new DEC PDP-1. The game pitted two human players against each other, each controlling a space ship capable of firing missiles. A black hole in the center created a large gravitational field and another source of hazard. This game was soon distributed with new DEC computers and traded throughout primitive cyberspace. Presented at the MIT Science Open House in 1962, it was the first widely available and influential game.

One of the developers of Multics, Ken Thompson, continued to develop the operating system after AT&T stopped funding it. His work focused on development of the OS for the GE-645 mainframe. He actually wanted to play a game he was writing called Space Travel. Though the game was never released commercially (and apparently costing $75 per go on the mainframe), the game's development led to the invention of the UNIX operating system.

In 1966, Ralph Baer (then at Sanders Associates) created a simple video game called Chase that could be displayed on a standard television set. Baer continued development, and in 1968 he had a prototype that could play several different games, including versions of table tennis and target shooting. Under Baer, Bill Harrison developed the light gun and, with Bill Rusch, created video games in 1967.

The 1970s

Coin-op Games: Dawn of a Golden Age

In 1971 Nolan Bushnell and Ted Dabney created a coin-operated arcade version of *Spacewar* and called it Computer Space. Nutting Associates bought the game, hired Bushnell, and manufactured 1,500 *Computer Space* machines. The game was not a success because many people found it difficult to play.

As Bushnell felt he did not receive enough pay by licensing games to other manufacturers, he founded his own company, Atari, in 1972. The first arcade video game with widespread success was Atari's Pong, released the same year. The game is loosely based around table tennis: ball is "served" from the center of the court and as the ball moves towards their side of the court each player must maneuver their bat to hit the ball back to their opponent. Atari sold 19,000 Pong machines, and soon many imitators followed. The coin-operated arcade video game craze had begun.

Exidy's Death Race (1976) sparked the first controversy over gratuitous violence in a video game, because the object of the game was to run over "gremlins"—who looked more like pedestrians—with a car. The controversy increased public awareness of video games and has never ceased to be debated.

The arcade game industry entered its Golden Age in 1978 with the release of Space Invaders by Taito. This game was a runaway blockbuster hit that inspired dozens of manufacturers to enter the market and produce their own video games. The Golden Age was marked by a prevalence of arcades and new color arcade games that continued until the 1980s or 1990s.

Also in 1978, Atari released Asteroids, its biggest best-seller. It replaced the game Lunar Lander as the number one arcade hit. Color arcade games became more popular in 1979 and 1980 (e.g. Pac-Man).

Other arcade classics of the late 1970s include Night Driver, Galaxian, and Breakout.

Games on University Mainframe Computers

University mainframe game development blossomed in the early 1970's. The history of this era is difficult to write in a comprehensive way for several reasons:

- Until the late 1970's game programmers never received any money for their work. The reward for designers of this era was praise from friends and an occasional fan letter from students at another university.

- There is little record of all but the most popular games, since they were played on machines which are no longer operated and saved on tapes that no longer exist.

- There were at least two major distribution networks for the student game designers of this time, and schools typically had access to only one brand of hardware and one supply of shared games. Many websites dedicated to the history of games focus solely on one system or the other, because the authors never had access to the "parallel universe" of the other hardware platform. The two largest systems were:
    - ○ The PLATO System supported by Control Data Corporation under the support of William Norris and largely running on CDC mainframe computers, and
    - ○ The DECUS software sharing system run by Digital Equipment Corporation for schools and other institutions utilizing DEC computers such as the PDP-10.

Highlights of this period, in apporoximate chronological order, include:

- 1971: Don Daglow wrote the first Computer Baseball game on a PDP-10 mainframe at Pomona College. Players could manage individual games or simulate an entire season. Daglow went on to team with programmer Eddie Dombrower to design Earl Weaver Baseball, published by Electronic Arts in 1987.

- 1971: Star Trek was created, probably by Mike Mayfield on a Sigma 7 minicomputer at MIT. This is the best-known and most widely played of the 1970's Star Trek titles, and was played on a series of small "maps" of galactic sectors printed on paper or on the screen. It was the first major game to be ported across hardware platforms by students. Daglow also wrote a popular Star Trek game for the PDP-10 during 1971-72, which presented the action as a script spoken by the TV program's characters. A number of other Star Trek themed games were also available via PLATO and DECUS throughout the decade.

- 1972: Gregory Yob wrote Hunt the Wumpus for the PDP-10, a hide-and-seek game, though it could be considered the first text adventure. Yob wrote it in reaction to existing hide-and-seek games such as Hurkle, Mugwump, and Snark.

- 1974: Both Maze War (on the Imlacs PDS-1 at the NASA Ames Research Center in California) and Spasim (on PLATO) appeared, pioneering examples of early multi-player 3D first person shooters.

- 1975: Will Crowther wrote the first text adventure game as we would recognize it today, Adventure (originally called ADVENT, and later Colossal Cave). It was programmed in Fortran for the PDP-10. The player controls the game through simple sentence-like text commands and receives descriptive text as output. The game was later re-created by students on PLATO, so it is one of the few titles that became part of both the PLATO and PDP-10 traditions.

- 1975: Before the mid-1970's games typically communicated to the player on paper, using teletype machines or a line printer, at speeds ranging from 10 to 30 characters per second with a rat-a-tat-tat sound as a metal ball or belt with characters was pressed against the paper through an inked ribbon by a hammer. By 1975 many universities had discarded these terminals for CRT screens, which could display thirty lines of text in a few seconds instead of the minute or more that printing on paper required. This led to the development of a series of games that drew "graphics" on the screen.

- 1975: Daglow, then a student at Claremont Graduate University, wrote the first Computer Role Playing Game on PDP-10 mainframes, Dungeon. The game was an unlicensed implementation of the new role playing game Dungeons and Dragons. Although displayed in text, it was the first game to use line of sight graphics, top-down dungeon maps that showed the areas that the party had seen or could see, allowing for light or darkness, the different vision of elves and dwarves, etc.

- 1975: At about the same time the RPG *dnd*, also based on *Dungeons and Dragons* first appeared on PLATO system CDC computers. For players in these schools *dnd*, not *Dungeon*, was the first computer role-playing game.

- 1977: The writing of the original Zork was started by Dave Lebling, Marc Blank, Tim Anderson, and Bruce Daniels. Unlike Crowther, Daglow and Yob, the Zork team recognized the potential to move these games to the new personal computers, and they founded text adventure publisher Infocom in 1979. The company was later sold to Activision. In a classic case of "connections", Lebling was a member of the same D&D group as Will Crowther, but not at the same time. Lebling has been quoted as saying "I think I actually replaced him when he dropped out. *Zork* was 'derived' from *Advent* in that we played *Advent*... and tried to do a 'better' one. There was no code borrowed... and we didn't meet either Crowther or Woods until much later."

- 1980: Michael Toy, Glenn Wichman and Ken Arnold released Rogue on the PLATO system after two years of work, inspiring many roguelike games ever since. Like Dungeon on the PDP-10 and dnd on PLATO, *Rogue* displayed dungeon maps using text characters. Unlike those games, however, the dungeon was randomly generated for each play session, so the path to treasure and the enemies who protected it were different for each game. As the *Zork* team had done, *Rogue* was adapted for home computers and became a commercial product.

Early handheld games

The first portable, handheld electronic game was *Tic Tac Toe,* made in 1972 by a company called Waco. The display consisted of a grid of nine buttons, that could turn red or green when pushed. The first handheld game console with interchangeable cartridges was the Microvision designed by Smith Engineering, and distributed and sold by Milton-Bradley in 1979. Crippled by a small, fragile LCD display and a very narrow selection of games, it was discontinued two years later. Although neither would prove popular, they paved the way for more advanced single-game handhelds, often simply called "LED games" or "LCD games" depending on their display system.

In 1976 Engineers at Rockwell International Microelectronics Division collaborated with designers at Mattel to create the first LED handheld game, Mattel Auto-Race. A handheld calculator chip was redesigned and programmed by Mark Lesser at Rockwell based on a design by George Klose and Richard Cheng of Mattel. The program was 512 bytes long. Subsequently, the same team produced Mattel Football I, which sold well over one million units and ushered in a short golden age of LED handheld games, especially sports games. At first composed of simple arrangements of LEDs, later games incorporated vacuum fluorescent displays allowing for detailed graphics in bright colors. The heyday of LED and VFD would last until the early 80s, when LCD technology became cheap and durable enough to be a viable alternative.

Gaming on home computers

While the fruit of development in early video games appeared mainly (for the consumer) in video arcades and home consoles, the rapidly evolving home computers of the 1970s and 80s allowed their owners to program simple games. Hobbyist groups for the new computers soon formed and game software followed.

Soon many of these games (at first clones of mainframe classics such as Star Trek, and then later clones of popular arcade games) were being distributed through a variety of channels, such as printing the game's source code in books (such as David Ahl's Basic Computer Games), magazines (Creative Computing), and newsletters, which allowed users to type in the code for themselves. Early game designers like Crowther, Daglow and Yob would find the computer code for their games -- which they had never thought to copyright -- published in books and magazines, with their names removed from the listing. Early home computers from Apple, Commodore, Tandy and others had many games that people typed in.

Another distribution channel was the physical mailing and selling of floppy disks, cassette tapes and ROM cartridges. Soon a small cottage industry was formed, with amateur programmers selling disks in plastic bags put on the shelves of local shops, or sent through the mail. Richard Garriott distributed several copies of his 1980 computer role-playing game *Akalabeth* in plastic bags before the game was published.

The first home video games (1972-1977)

1972 also saw the release of the first video game console for the home market, the Magnavox Odyssey. Built using mainly analog electronics, it was based on Ralph Baer's earlier work and licensed from his employer. The console was connected to a home television set. It was not a large success, although other companies with similar products (including Atari) had to pay a licensing fee for some time. It wasn't until Atari's home version of Pong (at first under the Sears Tele-Games label) in Christmas of 1975 that home video games really took off. The success of Pong sparked hundreds of clone games, including the Coleco Telstar, which went on to be a success in its own right, with over a dozen models.

Early 8-bit home consoles (1977-1983)

In the earliest consoles, the computer code for one or more games was hardcoded into microchips using discrete logic, and no additional games could ever be added. By the mid-1970's video games were found on cartridges. Programs were burned onto ROM chips that were mounted inside plastic cartridge casings that could be plugged into slots on the console. When the cartridges were plugged in, the general-purpose microprocessors in the consoles read the cartridge memory and ran whatever program was stored there. Rather than being confined to a small selection of games included in the box, consumers could now amass libraries of game cartridges.

The **Fairchild VES** was the world's first cartridge-based video game console. It was released by Fairchild Semiconductor in August 1976. When Atari released their VCS the next year, Fairchild quickly re-named it to the Fairchild Channel F.

In 1977, Atari released its cartridge-based console called the **Video Computer System (VCS)**, later called Atari 2600. Nine games were designed and released for the holiday season. It would quickly become by far the most popular of all the early consoles.

In 1978 Magnavox released its cartridge-based console, the Odyssey 2, in the United States and Canada. Philips Electronics released this same game console as the Philips G7000 in many European countries. Although it never became as popular as Atari, it managed to sell several million units through 1983.

In 1979, Activision was created by disgruntled former Atari programmers. It was the first third-party developer of video games. Many new developers would follow their lead in succeeding years.

The next major entry was Intellivision, introduced by Mattel in 1980. Though chronologically part of what is called the "8-bit era", the Intellivision had a unique processor with instructions that were 10 bits wide (allowing more instruction variety and potential speed), and registers 16 bits wide. The system, which featured graphics superior to the older Atari 2600, rocketed to popularity.

Unique among home systems of the time was the Vectrex, the only one to feature vector graphics.

1982 saw the introduction of the Colecovision, an even more powerful machine. Its sales also took off, but the presence of three major consoles in the marketplace and a glut of poor quality games began to overcrowd retail shelves and erode consumers' interest in video games. Within a year this overcrowded market would crash.

The popularity of early consoles was strongly influenced by their ports of arcade games. The 2600 was the first with Space Invaders, and the Colecovision had Donkey Kong.

Early cartridges were 2KB ROMs for Atari 2600 and 4K for Intellivision. This upper limit grew steadily from 1978 to 1983, up to 16KB for Atari 2600 and Intellivision, 32KB for Colecovision. *Bank switching,* a technique that allowed two different parts of the program to use the same memory addresses was required for the larger cartridges to work.

In the game consoles, high RAM prices at the time limited the RAM (memory) capacity of the systems to a tiny amount, often less than a Kilobyte. Although the cartridge size limit grew steadily, the RAM limit was part of the console itself and all games had to work within its constraints.

By 1982 a glut of games from new third-party developers less well-prepared than Activision began to appear, and began to overflow the shelf capacity of toy stores.

In part because of these oversupplies, the video game industry crashed, starting from Christmas of 1982 and stretching through all of 1983. See the main article: Video game crash of 1983.

The 1980s

In the early 1980s, the computer gaming industry experienced its first major growing pains. Publishing houses appeared, with many honest businesses (and in rare cases such as Electronic Arts, successfully surviving to this day) alongside fly-by-night operations that cheated the games' developers. While some early 80s games were simple clones of existing arcade titles, the relatively low publishing costs for personal computer games allowed for many bold, unique games, a legacy that continues to this day. The primary gaming computers of the 1980s emerged in 1982: the Commodore 64 and ZX Spectrum.

The Golden age of arcade games reached its full steam in the 1980s, with many technically innovative and genre-defining games in the first few years of the decade. Defender (1980) established the scrolling shooter and was the first to have events taking place outside the player's view, displayed by a radar view showing a map of the whole playfield. Battlezone (1980) used wireframe vector graphics to create the first true three-dimensional game world. 3D Monster Maze (1981) was the first 3D game for a home computer. Pole Position (1982) used sprite-based, pseudo-3D graphics when it pioneered the "rear-view racer format" where the player's view is behind and above the vehicle, looking forward along the road with the horizon in sight. The style would remain in wide use even after true 3D graphics became standard for racing games. Pac-Man (1980) was the first game to achieve widespread popularity in mainstream culture and the first game character to be popular in his own right. Dragon's Lair (1983) was the first laserdisc game, and introduced full-motion video to video games.

With *Adventure* establishing the genre, the release of Zork in 1980 further popularized text adventure games in home computers and established developer Infocom's dominance in the field. As these early computers often lacked graphical capabilities, text adventures proved successful. When affordable computers started catching up to and surpassing the graphics of consoles in the late 1980s, the games' popularity waned in favor of graphic adventures and other genres. The text adventure would eventually be known as interactive fiction and a small dedicated following has kept the genre going, with new releases being nearly all free.

Also published in 1980 was Roberta Williams' Mystery House, for the Apple II. It was the first graphic adventure on home computers. Graphics consisted entirely of static monochrome drawings, and the interface still used the typed commands of text adventures. It proved very popular at the time, and she and husband Ken went on to found Sierra On-Line, a major producer of adventure games. *Mystery House* remains largely forgotten today.

In August of 1982, the Commodore 64 was released to the public. It found initial success because it was marketed and priced aggressively. It had a BASIC programming environment and advanced graphic and sound capabilities for its time, similar to the Colecovision console. It would become the most popular home computer of its day in the USA and many other countries and the best-selling single computer model of all time internationally.

At around the same time, the ZX Spectrum was released in the UK and quickly became the most popular home computer in most of Western Europe, and later the Soviet bloc due to the ease with which clones could be produced.

SuperSet Software created Snipes, a text-mode networked computer game in 1983 to test a new PC based computer network and demonstrate its capabilities. Snipes is officially credited as being the original inspiration for Novell Netware. It is believed to be the first network game ever written for a commercial personal computer and is recognised alongside 1974's Maze War (a networked multiplayer maze game for several research machines) and Spasim (a 3d multiplayer space simulation for time shared mainframes) as the precursor to multi-player games such as Doom and Quake.

The true modern adventure game would be born with the Sierra King's Quest series in 1984. It featured color graphics and a third person perspective. An on-screen player-controlled character could be moved behind and in front of objects on a 2D background drawn in perspective, creating the illusion of pseudo-3D space. Commands were still entered via text. Lucasarts would do away with this last vestige feature of text adventures when its 1987 adventure Maniac Mansion built with its SCUMM system allowed a point-and-click interface.

Sierra and other game companies quickly followed with their own mouse-driven games. For more on the history of adventures games.

With Elite in 1984, David Braben and Ian Bell ushered in the age of modern style 3d graphics in the home, bringing a convincing vector world with full 6 degree freedom of movement and thousands of visitable planetary systems into the living room. Initially only available for the BBC Micro and Acorn Electron, the success of this title caused it eventually to be ported to all popular formats, including the Commodore 64, ZX Spectrum, Commodore Amiga, Atari ST and even the Nintendo Entertainment System, although this version only received a European release.

The personal computer became a competitive gaming platform with IBM's PC/AT in 1984. The new 16-color EGA display standard allowed its graphics to approach the quality seen in popular home computers like the Commodore 64. Sound however, was still only the crude bleeps of PC speakers. The primitive 4-color CGA graphics of previous models had limited the PC's appeal to the business segment, since its graphics failed to compete with the C64 or Apple II.

The Apple Macintosh also arrived at this time. It lacked the color capabilities of the earlier Apple II, instead preferring a much higher pixel resolution, but the operating system support for the GUI attracted developers of some interesting games (e.g. Lode Runner) even before color returned in 1987 with the Mac II.

In computer gaming, the later 1980s are primarily the story of the United Kingdom's rise to prominence. The market in the U.K. was primely positioned for this task: personal computer users were offered a smooth scale of power versus price, from the ZX Spectrum up to the Amiga, developers and publishers were in close enough proximity to offer each other support, and the NES made much less of an impact than it did in the United States, being outsold by the Master System.

The arrival of the Atari ST and Commodore Amiga in 1985 was the beginning of a new era of 16-bit machines. For many users they were too expensive until later on in the decade, at which point advances in the IBM PC's open platform had caused the IBM PC compatibles to become comparably powerful at a lower cost than their competitors. The VGA standard developed for IBM's new PS/2 line in 1987 gave the PC the potential for 256-color graphics. This was a big jump ahead of most 8-bit home computers but still lagging behind platforms with built-in sound and graphics hardware like the Amiga, causing an odd trend around '89-91 towards developing to a seemingly inferior machine. Thus while both the ST and Amiga were host to many technically excellent games, their time of prominence proved to be shorter than that of the 8-bit machines, which saw new ports well into the 80s and even the 90s.

AdLib set an early defacto standard for sound cards in 1987, with its card based on the Yamaha YM3812 sound chip. This would last until the introduction of Creative Labs' Sound Blaster in 1989, which took the chip and added new features while remaining compatible with AdLib cards, and creating a new defacto standard. However, many games would still support these and rarer things like the Roland MT-32 and Disney Sound Source into the early 90s. The initial high cost of sound cards meant they would not find widespread use until the 1990s.

Shareware gaming first appeared in the late 1980s, but its big successes came in the 1990s.

Bulletin Board Systems and early online gaming

Dialup bulletin board systems were popular in the 1980s, and sometimes used for online game playing. The earliest such systems, in the late 1970s and early 1980s, had a crude plain-text interface, but later systems made use of terminal-control codes (the so-called ANSI art, which included the use of IBM-PC-specific characters not actually part of an ANSI standard) to get a pseudo-graphical interface. Some BBSes offered access to various games which were playable through such an interface, ranging from text adventures to gambling games like blackjack (generally played for "points" rather than real money). On multiuser BBSs (where more than one person could be online at once), there were sometimes games allowing the different users to interact with one another; some such games of the fantasy role-playing variety were known as MUDs, for "multi-user dungeons". Today, a popular game in this catagory is Urban dead.

Commercial online services also arose during this decade, starting with a plain-text interface similar to BBSs (but operated on large mainframe computers permitting larger numbers of users to be online at once), and moving by the end of the decade to fully-graphical environments using software specific to each personal computer platform. Popular text-based services included CompuServe, The Source, and GEnie, while platform-specific graphical services included Quantum Link for the Commodore 64, AppleLink for the Apple II and Macintosh, and PC Link for the IBM PC, all of which were run by the company which eventually became America Online; and a competing service, Prodigy. Interactive games were a feature of these services, though until 1987 they used text-based displays, not graphics.

Handheld LCD games

Nintendo's Game & Watch line began in 1980. The success of these LCD handhelds spurred dozens of other game and toy companies to make their own portable games, many being copies of Game & Watch titles or adaptations of popular arcade games. Improving LCD technology meant the new handhelds could be more reliable and consume less batteries than LED or VFD games, most only needing watch batteries. They could also be made much smaller than most LED handhelds, even small enough to wear on one's wrist like a watch. Tiger Electronics borrowed this concept of videogaming with cheap, affordable handhelds.

8-bit era, or 'Post-crash/Late' 8-bit era (1985-1989)

In 1984, the computer gaming market took over from the console market following the crash of that year; computers offered equal gaming ability and since their simple design allowed games to take complete command of the hardware after power-on, they were nearly as simple to start playing with as consoles.

In 1985, the North American video game console market was revived with Nintendo's release of its 8-bit console, the Famicom, known in the United States under the name Nintendo Entertainment System (NES). It was bundled with Super Mario Bros. and suddenly became a success. The NES dominated the North American market until the rise of the next generation of consoles in the early 1990s. Other markets were not as heavily dominated, allowing other consoles to find an audience like the PC Engine in Japan and the Sega Master System in Europe, Australia and Brazil. At this time, Squaresoft was struggling and Hironobu Sakaguchi decided to make their final game a fantasy role-playing game, and the Final Fantasy series was born. *Final Fantasy* saved Squaresoft from bankruptcy.

In the new consoles, the gamepad took over joysticks, paddles, and keypads as the default game controller included with the system. The gamepad design of an 8 direction D-pad with 2 or more action buttons became the standard.

In 1988 Nintendo published their first issue of Nintendo Power Magazine.

The 1990s

If the 1980s were about the rise of the industry, the 1990s were about its maturing into a Hollywood-esque landscape of ever-increasing budgets and increasingly consolidated publishers, with the losers slowly being crushed or absorbed. As this happens, the wide variety of games that existed in the 1980s appears to fade away, with the larger corporations desiring to maximize profitability and lower risk.

With the increasing computing power and decreasing cost of processors like Intel 386, 486, and Motorola 68000, the 1990s saw the rise of 3D graphics, as well as "multimedia" capabilities through sound cards and CD-ROMs.

In the early 1990s, shareware distribution was a popular method of publishing games for smaller developers, including then-fledgling companies such as Apogee (now 3D Realms), Epic Megagames (now Epic Games), and id Software. It gave consumers the chance to try a trial portion of the game, usually restricted to the game's complete first section or "episode", before purchasing the rest of the adventure. Racks of games on single 5 1/4" and later 3.5" floppy disks were common in many stores, often only costing a few dollars each. Since the shareware versions were essentially free, the cost only needed to cover the disk and minimal packaging. As the increasing size of games in the mid-90s made them impractical to fit on floppies, and retail publishers and developers began to earnestly mimic the practice, shareware games were replaced by shorter demos (often only one or two levels), distributed free on CDs with gaming magazines and over the Internet.

Shareware was also the distribution method of choice of early modern first-person shooters (FPS) like Wolfenstein 3D and Doom. Following Doom, the retail publishers and developers began to earnestly mimic the practice of offering demos, which had the effect of reducing shareware's appeal for the rest of the decade. During this time, the increasing computing power of personal computers began to allow rudimentary 3D graphics. 1993's Doom in particular was largely responsible for defining the genre and setting it apart from other first-person perspective games. The term **FPS** has generally come to refer to games where the player has full control over a (usually humanoid) character and can interact directly with the environment; almost always centering around the act of aiming and shooting with multiple styles of weapons and limited ammunition.

1992 saw the release of real-time strategy (**RTS**) game Dune 2. It was by no means the first in the genre (that being 1983's Stonkers for the ZX Spectrum), but it set the standard game mechanics for later blockbuster RTS games like Warcraft and Command and Conquer. The RTS is characterised by an overhead view, a "mini-map", and the control of both the economic and military aspects of an army. The rivalry between the two styles of RTS play - WarCraft style, which used GUIs accessed once a building was selected, and C&C style, which allowed construction of any unit from within a permanently visible menu - continued into the start of the next millennium.

Alone in the Dark (1992) planted the seeds of what would become known as the survival horror genre. It established the formula that would later flourish on CD-ROM based consoles, with games like Resident Evil and Silent Hill.

Adventure games continued to evolve, with Sierra's King's Quest series, and LucasFilms'/LucasArts' Monkey Island series bringing graphical interaction and the creation of the concept of "point-and-click" gaming. Myst and its sequels inspired a new style of puzzle-based adventure games. Published in 1993, Myst itself was one of the first computer games to make full use of the new high-capacity CD-ROM storage format. It went on to remain the best-selling game of all time for much of the decade, and was one "killer apps" that made CD-ROM drives standard features on PCs. Despite Myst's mainstream success, the increased popularity of action-based and real-time games led adventure games and simulation games, both mainstays of computer games in earlier decades, to begin to fade into obscurity.

It was in the 1990's that Maxis began publishing its succeseful line of "sim" games, beginning with Sim City, and continuing with a variety of titles, such as Sim Earth, Sim City 2000, Sim Ant, Sim Tower, and the wildly popular day to day life simulator, The Sims.

In 1996, 3dfx released the Voodoo chipset, leading to the first affordable 3D accelerator cards for personal computers. These devoted 3D rendering daughter cards performed most of computation required for rendering higher-resolution, more-detailed three-dimensional graphics, allowing for more-detailed graphics than would be possible if the CPU were required to handle both game logic and graphical tasks. First-person shooter games (notably Quake) were among the first to take advantage of this new technology. While other games would also make use of it, the FPS would become the chief driving force behind the development of new 3D hardware, as well as the yardstick by which its performance would be measured, usually quantified as the number of frames per second rendered for a particular scene in a particular game.

Several other, less-mainstream, genres were created in this decade. Looking Glass Studios' Thief and its sequel were the first to coin the term "first person sneaker", although it is questionable whether they are the first "first person stealth" games. Turn-based strategy progressed further, with the Heroes of Might and Magic (HOMM) series (from 3DO) luring many main-stream gamers into this complex genre.

The 90s also saw the beginnings of Internet gaming, with MUDs (Multi-User Dungeons) in the early years. Id Software's 1996 game Quake pioneered play over the Internet in first-person shooters. Internet multiplayer capability became a defacto requirement in almost all FPS games. Other genres also began to offer online play, including RTS games like Microsoft's Age of Empires, Blizzard's WarCraft and StarCraft series, and turn-based games such as Heroes of Might and Magic. MMORPGs (Massively Multiplay Online Roleplaying Games), such as Ultima Online and EverQuest freed users from the limited number of simultaneous players in other games and brought the MUD concept of persistent worlds to graphical multiplayer games. Developments in web browser plugins like Java and Macromedia Flash allowed for simple browser-based games. These are small single player or multiplayer games that can be quickly downloaded and played from within a web browser without installation. Their most popular use is for puzzle games, classic arcade games, and multiplayer card and board games.

Gamers in the 90s began to take their fates into their own hands, with the creation of modifications (or "mods") for popular games. It is generally accepted that the earliest mod was Castle Smurfenstein, for Castle Wolfenstein. Eventually, game designers realised that custom content increased the lifespan of their games, and so began to encourage the creation of mods. Half-Life spawned perhaps the most successful (or, at the very least, one of the most widely played) mods of all time, with a squad-based shooter entitled CounterStrike. Since CounterStrike, many games have encouraged the creation of custom content. Other examples include Unreal Tournament, which allowed players to import 3dsmax scenes to use as character models, and Maxis's The Sims, for which players could create custom objects.

Few new genres have been created since the advent of the FPS and RTS, with the possible exception of the third-person shooter. Games such as Grand Theft Auto III, Splinter Cell, Enter The Matrix and Hitman all use a third-person camera perspective but are otherwise very similar to their first-person counterparts.

Decline of arcades

With the 16-bit and 32-bit consoles, home video games began to approach the level of graphics seen in arcade games. By this time, video arcades had earned a reputation for being seedy, unsafe places. An increasing number of players would wait for popular arcade games to be ported to consoles rather than going out. Arcades had a last hurrah in the early 90s with *Street Fighter II* and the one-on-one fighting game genre it founded. As patronage of arcades declined, many were forced to close down. Classic coin-operated games have become largely the province of dedicated hobbyists. The gap left by the old corner arcades was partly filled by large amusement centres dedicated to providing clean, safe environments and expensive game control systems not available to home users. These are usually based on sports like skiing or cycling, as well as rhythm games like *Dance Dance Revolution*, which have carved out a large slice of the pie.

Handhelds come of age

In 1989, Nintendo released the Game Boy, the first handheld console since the ill-fated Microvision ten years before. The design team headed by Gumpei Yokoi had also been responsible for the Game & Watch systems. Included with the system was Tetris, a popular puzzle game. Several rival handhelds also made their debut around that time, including the Sega Game Gear and Atari Lynx. Although most other systems were more technologically advanced, they were hampered by higher battery consumption and less third-party developer support. While some of the other systems remained in production until the mid-90s, the Game Boy remained at the top spot in sales throughout its lifespan.

1994

- Nintendo released the Super Game Boy, an adapter for the Super NES which allowed Game Boy games to be played in the console.

16-bit era (1989-1994)

Main articles: History of video games (16-bit era)

The North American market was dominated by the Sega Genesis early on after its debut in 1989, with the Nintendo Super NES proving a strong, roughly equal rival in 1991. The NEC TurboGrafx 16 was the first 16-bit system to be marketed in the region, but did not achieve a large following, partly due to a limited library of English games and effective marketing from Sega.

The intense competition of this time was also a period of not entirely truthful marketing. The Turbographx 16 was billed as the first

16-bit system but the central processor was an 8-bit HuC6280, with only its HuC6260 graphics processor being a true 16-bit chip. Sega used the term Blast Processing to describe the simple fact that its CPU ran at a higher clock speed than the SNES (7.67 MHz vs 3.58 MHz).

In Japan, the PC Engine's (Turbografx 16) 1987 success against the Famicom and CD drive peripheral allowed it to fend off the Mega Drive (Genesis) in 1988, which never really caught on to the same degree as outside Japan. The PC Engine eventually lost out to the Super Famicom, but retained enough of a user base to support new games well into the late 1990s.

CD-ROM drives were first seen in this generation, as add-ons for the PC Engine in 1988 and the Megadrive in 1991. Basic 3D graphics entered the mainstream with flat-shaded polygons enabled by additional processors in game cartridges like Virtua Racing and Starfox.

SNK's Neo-Geo was the most expensive console by a wide margin when it was released in 1990, and would remain so for years. It was also capable of 2D graphics in a quality level years ahead of other consoles. The reason for this was that it contained the same hardware that was found in SNK's arcade games. This was the first time since the home Pong machines that a true-to-the-arcade experience could be had at home.

32-bit / 64-bit era (1995 - 1999)

Main articles: History of video games (32-bit era)

In 1994-1995, Sega released Sega Saturn and Sony made its debut to the video gaming scene with the PlayStation. Both consoles used 32-bit technology; the door was open for 3D games.

After many delays, Nintendo released its 64-bit console, the Nintendo 64 in 1996, selling more than 1.5 million units in only three months. The flagship title, Super Mario 64, became a defining title for 3D platformer games.

Parappa the Rapper popularized rhythm, or music video games in Japan with its 1996 debut on the PlayStation. Subsequent music and dance games like Beatmania and Dance Dance Revolution became ubiquitous attractions in Japanese arcades. They became known as Bemani games, the name derived from *Beatmania*. While *Parappa*, *DDR*, and other games found a cult following when brought to North America, music games would not gain a wide audience in the market until the next decade.

Other milestone games of the era include Rare's Nintendo 64 title GoldenEye 007 (1997), which was critically acclaimed for actually being a good movie-licensed game as well as the first good FPS on a console, and The Legend of Zelda: Ocarina of Time (1998), Nintendo's 3D debut for the Legend of Zelda adventure game series.

Nintendo's choice to use cartridges instead of CD-ROMs for the Nintendo 64, unique among the consoles of this period, proved to have negative consequences. In particular, SquareSoft, which had released all previous games in its Final Fantasy series for Nintendo consoles, now turned to the PlayStation; Final Fantasy VII (1997) was a huge success, establishing the popularity of role-playing games in the west and making the PlayStation the primary console for the genre.

By the end of this period, Sony had dethroned Nintendo, the PlayStation outselling the Nintendo 64. The Saturn was successful in Japan but a failure in North America, leaving Sega outside of the main competition.

The 2000s

Sixth generation era (1998 - 2004)

Main articles: Sixth generation era

1998

- Sega released the Dreamcast.
- Connectix Corporation released the Virtual Game Station, a successful PlayStation emulator. Sony went to court to dispute the legality of the system, but Connectix won. The Bleem company released Bleem!, another PlayStation emulator.

2000

- Sony released the PlayStation 2.
- The Sims was released. It was an instant hit and became the best-selling computer game of all time, surpassing Myst.

2001

- Nintendo released the GameCube and the successor to the Game Boy Color, the Game Boy Advance.
- Microsoft entered the videogame console industry by releasing its new home console, the Xbox. Its flagship game, *Halo: Combat Evolved*, is also available at the system's launch.
- Sega announced they would discontinue the Dreamcast and no

longer manufacture hardware.

2002

- Sega became a third-party developer for Nintendo, Sony, and Microsoft.

2003

- Infogrames, owner of the Atari intellectual properties, changed its name to Atari.
- Nintendo released the improved Game Boy Advance SP in March.
- Nokia entered the handheld market with its N-Gage game-phone hybrid on October 7.

Seventh generation (2004 - present)

Main articles: Seventh generation era

2004

- Nokia releases a re-tooled N-Gage, the N-Gage QD.
- Nintendo released the Nintendo DS in the U.S. on November 21.
- Sony released the PSP in Japan on December 12.

2005

- Sony PlayStation Portable (PSP) is released to the U.S. market on March 24.
- Sony demonstrates the capabilities of the PlayStation 3 during a pre-E3 press conference.
- Nintendo reveals early details of their next-generation video game console, the Nintendo Revolution during E3. At TGS Nintendo reveals their "revolutionary" controller. It includes tilt, position and movement sensors, and is one-handed (though an attachment can occupy the other hand for some games.)
- Nintendo reinvents the Game Boy Advance yet again to make the Game Boy Micro on October 2.
- Nokia announces the N-Gage will be discontinued until at least 2007 in November.
- Microsoft releases their second video game console, the Xbox 360 on November 22.

References

Forster, Winnie (2005). The Encyclopedia of Game Machines - Consoles, handheld & home computers 1972-2005, GAMEplan. ISBN 3-00-015359-4. [1]

DeMaria, Rusel (2 edition (December 18, 2003)). High Score!: The Illustrated History of Electronic Games, McGraw-Hill Osborne Media. ISBN 0072231726.

See also

- Golden age of arcade games
- Computer and video games

External links

- A Santa Clara University student's *History of Video Games*
- A History of Video Games with separate sections for Arcade games and home consoles and numerous photos
- The Dot Eaters, a detailed history of various types of video games
- The First Video Game a description at Brookhaven National Laboratory
- PONG-Story, on the history of *Pong* and other early video games
- Dark Watcher's Console History includes many obscure consoles from the 1970s and 80s
- Press Release of GSN's *Video Game Invasion: The History Of A Global Obsession* hosted by Tony Hawk (IMDb)
- Ars Technica's *The evolution of gaming: computers, consoles, and arcade*

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History of Video Games (Pre-crash Systems)

Main article: History of computer and video games

Television engineer Ralph Baer conceived the idea of an interactive television while employed by Loral Electronics in 1951 in Bronx, New York. No game was produced because his employer rejected the design, but he resumed this early work in 1966 while at Sanders Associates. Baer created a simple video game called Chase that could be displayed on a standard television set. He continued development, and in 1968 he had a prototype that could play several different games, including versions of table tennis and target shooting. Under Baer, Bill Harrison developed the light gun and, with Bill Rusch, created video games in 1967.

The first home video games (1972-1977)

1972 saw the release of the first video game console for the home market, the Magnavox Odyssey. Built using mainly analog electronics, it was based on Baer's early work and licensed from Sanders Associates. The console was connected to a home television set. It was not a large success, although other companies with similar products (including Atari) had to pay a licensing fee for some time. For a time it was Sanders' most profitable line, even though many in the company looked down on game development. It wasn't until Atari's home version of PONG (at first under the Sears Tele-Games label) in Christmas of 1975 that home video games really took off. The success of Pong sparked hundreds of clone games, including the Coleco Telstar, which went on to be a success in its own right, with over a dozen models.

Early 8-bit home consoles (1977-1983)

In the earliest consoles, the computer code for one or more games was hardcoded into microchips using discrete logic, and no additional games could ever be added. By the mid-1970's video games were found on cartridges. Programs were burned onto ROM chips that were mounted inside plastic cartridge casings that could be plugged into slots on the console. When the cartridges were plugged in, the general-purpose microprocessors in the consoles read the cartridge memory and ran whatever program was stored there. Rather than being confined to a small selection of games included in the box, consumers could now amass libraries of game cartridges.

The Fairchild VES was the world's first cartridge-based video game console. It was released by Fairchild Semiconductor in August 1976. When Atari released their VCS the next year, Fairchild quickly renamed it to the Fairchild Channel F.

In 1977, Atari released its cartridge-based console called the Video Computer System (VCS), later called Atari 2600. Nine games were designed and released for the holiday season. It would quickly become by far the most popular of all the early consoles.

In 1978 Magnavox released its cartridge-based console, the Odyssey 2, in the United States and Canada. Philips Electronics released this same game console as the Philips G7000 in many European countries. Although it never became as popular as Atari, it managed to sell several million units through 1983.

In 1979, Activision was created by disgruntled former Atari programmers. It was the first third-party developer of video games. Many new developers would follow their lead in succeeding years.

The next major entry was Intellivision, introduced by Mattel in 1980. Though chronologically part of what is called the "8-bit era", the Intellivision had a unique processor with instructions that were 10 bits wide (allowing more instruction variety and potential speed), and registers 16 bits wide. The system, which featured graphics superior to the older Atari 2600, rocketed to popularity.

Unique among home systems of the time was the Vectrex, the only one to feature vector graphics.

1982 saw the introduction of the Colecovision, an even more powerful machine. Its sales also took off, but the presence of three major consoles in the marketplace and a glut of poor quality games began to overcrowd retail shelves and erode consumers' interest in video games. Within a year this overcrowded market would crash.

The popularity of early consoles was strongly influenced by their ports of arcade games. The 2600 was the first with Space Invaders, and the Colecovision had Donkey Kong.

Early cartridges were 2KB ROMs for Atari 2600 and 4K for Intellivision. This upper limit grew steadily from 1978 to 1983, up to 16KB for Atari 2600 and Intellivision, 32KB for Colecovision. Bank switching, a technique that allowed two different parts of the program to use the same memory addresses was required for the larger cartridges to work.

In the game consoles, high RAM prices at the time limited the RAM (memory) capacity of the systems to a tiny amount, often less than a Kilobyte. Although the cartridge size limit grew steadily, the RAM limit was part of the console itself and all games had to work within its constraints.

By 1982 a glut of games from new third-party developers less well-prepared than Activision began to appear, and began to overflow the shelf capacity of toy stores.

In part because of these oversupplies, the video game industry crashed, starting from Christmas of 1982 and stretching through all of 1983.

Early handheld game consoles

The first handheld game console with interchangeable cartridges was the Microvision designed by Smith Engineering, and distributed and sold by Milton-Bradley in 1979. Crippled by a small, fragile LCD display and a very narrow selection of games, it was discontinued two years later.

The Epoch Game Pocket Computer was released in Japan in 1984. The Game Pocket Computer featured an LCD screen with 75 X 64 resolution, and could produce graphics at about the same level as early Atari 2600 games. The system sold poorly, and as a result only 5 games were made for it. Possibly due to its failure in Japan, the Game Pocket Computer was never released elsewhere.

The first home video game systems

Magnavox Odyssey (1972)
Atari PONG (1975)
Coleco Telstar (1976)
APF TV Fun (1976)

Early cartridge-based 8-bit systems

Fairchild Channel F (1976)
RCA Studio II (1976)
Atari 2600 (1977)
Bally Astrocade (1977)
Magnavox Odyssey^2 (1978)
Mattel Intellivision (1980)
APF Imagination Machine (1979)
SEGA SG-1000(1981)
Atari 5200 (1982)
Milton Bradley Vectrex (1982)
Emerson Arcadia 2001 (1982)
Colecovision (1982)

Handheld Consoles

Milton Bradley Microvision (1979)
Epoch Game Pocket Computer (1984)

Video game franchises established during this time

- Asteroids
- Breakout
- Defender
- Donkey Kong
- Frogger
- Mario Bros.
- Mr. Do!
- Pac-man
- Pitfall
- Space Invaders
- Spy Hunter
- Tempest

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Video Game Crash of 1983

The **video game crash of 1983** was the sudden crash of the video game business and the bankruptcy of a number of companies producing home computers and video game consoles in North America in late 1983 and early 1984. It brought an end to what is considered the second generation of console video gaming.

This phenomenon unfolded primarily in the United States and Canada, since the contemporary global market for video game consoles had not yet evolved.

The crash was followed by a gap of three years, during which there was a much smaller market in games for home computers in North America, and no significant development for video game consoles. That gap ended with the success of the Nintendo Entertainment System (NES) that was first introduced in 1985 and would break out in popularity in 1987.

Note that this is often referred to as the "video game crash of 1984," because that was the year the full effects of the crash became obvious to consumers. Hundreds of games were in development for 1983 release, most of which ended up in bargain bins. But few games were developed in 1983 for release the following year, resulting in a drought of new video games in 1984.

Causes

The video game crash of 1983 was caused by a combination of factors:

- Very aggressive marketing of inexpensive home computers, especially the Commodore 64, with the theme "Why buy your child a video game and distract them from school when you can buy them a home computer that will prepare them for college?" Marketing research for both sides tracked the change as millions of consumers shifted their *intention to buy* choices from game consoles to low-end computers that retailed for similar prices.
- A flood of poor titles from hastily financed startups, combined with weak high-profile Atari 2600 games based on the hit movie E.T. and the red-hot arcade game *Pac-Man*.
- The news media sensationalized both the boom days of 1980 and the problems of 1982–83. In particular, the story of Atari burying tons of E.T. cartridges in a New Mexico landfill accelerated the change from **The Video Game Boom is Boundless!** headlines to **The Video Game Boom is Over!** proclamations.
- The conclusion by key toy retail chains in 1983 that video games were a passing fad (see Cabbage Patch Kids and Beanie Babies for examples) and that valuable shelf space should be allocated to new items.

The impact of home computers

Up until the early 1980s, personal computers had primarily been sold in specialty computer stores at a cost of more than 1,000 USD. The early 1980s saw the introduction of inexpensive computers that could connect to a TV set, and offered color graphics and sound. Many competing models vied for consumer attention. As the pioneering computer-book author and journalist David H. Ahl recounted in 1984:

> In the spring of 1982, the TI 99/4A was priced at $349, 16K Atari 400 at $349, and Radio Shack Color Computer at $379, while Commodore had just reduced the price of the Vic 20 to $199 and the C64 to $499.[1]

Since these and other computers generally had more memory available—and better graphic and sound capabilities—than a console, they permitted more sophisticated games and could also be used for tasks such as word processing and home accounting. Also, their games were much easier to copy, since they came on floppy disks or cassette tapes instead of ROM modules.

Commodore explicitly targeted video game consoles in its advertising, offered trade-ins toward the purchase of a Commodore

64, and suggested that college-bound children would need to own computers, not video games. Research by Atari and Mattel confirmed that these television ads badly damaged both their machines' images and sales.

Unlike most other computer manufacturers, Commodore also sold the machines in the same outlets as video game consoles: discount, department and toy stores. Commodore's vertical integration allowed it to engage in some predatory pricing; its margins were much higher than those of Texas Instruments, Coleco, or Atari, as Commodore's MOS Technology, Inc. subsidiary actually manufactured many of the chips (notably the 6502 CPU) used in Atari computers and video game machines. A similar situation had occurred in the calculator market in the early 1970s, when companies found themselves buying chips from Texas Instruments but also having to compete with TI's calculators.

The flood of products

Video games, like toys, are sold through stores on a model that is close to one of consignment. If a title does not sell, it is returned to the publisher for credit, and the store gets a different title in return. The process is repeated until the goods are sold. This business model—which persists today—is a key root of the Crash of 1983.

The first chapter of the coming disaster was actually written with high-quality games: Activision was co-founded by four Atari game designers who left the company in 1979 because Atari did not allow credits to appear on the games and did not pay employees a royalty based on sales. Atari quickly sued to block sales of Activision's products, but never won a restraining order and ultimately lost the case in 1982.

This court case legitimized third-party development, and companies as ill-prepared as Quaker Oats rushed to open video game divisions, hoping to impress both Wall Street and consumers. Companies lured away each others' programmers or used reverse engineering to learn how to make games for proprietary systems. Atari hired several Intellivision programmers, prompting a lawsuit by Mattel against Atari that included charges of industrial espionage. Rather than give credit to the Intellivision game designers, Mattel instead required that a 1981 TV Guide interview with them change all their names to protect their identities.

Unlike Microsoft, Nintendo, or Sony in later decades, the hardware manufacturers had lost the exclusive control of their platform's supply of games. With it they had lost the ability to make sure that the toy stores were never overloaded with product. Activision, Atari and Mattel had experienced programmers, but many of the new companies rushing to join the market did not have experienced talent to create the games. Titles such as *Chase the Chuck Wagon, Skeet Shoot,* and *Lost Luggage* were less-than-stellar examples of games companies made in the hopes of taking advantage of the video game boom. While heavily advertised and marketed, the games were poor and did not catch on as hoped.

The established video game companies also played a role in the crash. For example, when Atari issued its widely advertised *E.T.* game, it manufactured millions of units in anticipation of a major hit. Unfortunately, the game had been rushed to market after only six weeks of development time[2], and its low quality yielded poor sales, leaving Atari with huge stocks of product it could not sell. The game's poor reputation spread quickly by word of mouth, and the story was picked up by newscasts that trumpeted E.T. as the first great bomb of the video game age.[3]

Retailers' loss of faith

The rush to market of so many substandard games in 1982 flooded the retail channel. Inside Mattel, one Intellivision sales executive explained the problem by saying, "Two years of products have been pushed into the channel in one year, and there's no way to re-balance the system." When stores went to return goods to these new publishers, the publishers had neither new products nor cash to refund the retailers' money. Many, like *Games by Apollo* and *US Games*, the ill-fated Quaker Oats games unit, quickly folded.

Unable to return the unsold games to defunct publishers after Christmas in 1982, toy stores marked down the titles and placed them in discount bins and sale tables. Where the typical game of 1982 cost $34.95—about $71 in 2005 U.S. dollars when adjusted for inflation—the discount bins quickly settled on the price of $4.95 per game. By June 1983 the market for $34.95 games had plummeted, since consumers' trips to the store often began and ended at the discount bin.

Worse yet, the toy retailers which controlled consumers' access to games had concluded that video games were a fad, the fad was over, and that the shelf space should be reassigned to different products.

A massive industry shakeout resulted. Console manufacturers Mattel[4], Magnavox, and Coleco all abandoned the video game business. Imagic withdrew its IPO the day before its stock was to go public, and later collapsed. While the largest of the third-party cartridge makers, Activision, survived for several more years[5] on personal-computer platforms (thanks to their then-legal ability to average their income and recover millions in past tax payments from the IRS), most of the smaller software development houses supporting the Atari 2600 closed.

Some game enthusiasts consider 1983 a peak time in the history of arcade games, the home video game consoles' bigger, stand-alone brethren located in diners, shopping malls, and video arcades. Notably, this was the year the hugely successful Dragon's Lair was introduced, the first laserdisc video-game, which incorporated full-motion video animation. But coin-op games were caught up in the public perception that "the video game fad is over," and their sales dropped off sharply as well.

A savage price war

Contemporaneous with the gaming shakeout was a home-computer price war that proved disastrous for some contenders in the industry. As David Ahl recounted:

> In January 1983, Tramiel (Jack Tramiel, the head of Commodore) slashes the price of the Vic to $139 and the C64 to $400. TI reacts a month later with a rebate that lowers the street price of the 99/4A to $149. Tramiel turns around and cuts the price of the Vic to under $100, forcing TI to . . . announce a further cut in the price of the 99/4A to $100 to take effect in June . . . On June 10, 1983, TI announced the largest loss in their corporate history and three months later withdrew from the home computer market. Tramiel, still looking for market share, slashed the price of the C64 to $200 and virtually walked away with the holiday buying season for the second year in a row.[6]

Besides TI, casualties included the Coleco Adam, the Timex-Sinclair line, and a number of other smaller players. Atari nearly went bankrupt and in 1984 was sold off by its parent company Warner Communications (now part of Time Warner). The purchaser was, ironically, Jack Tramiel. Commodore's board of directors, keen on taking the company into a direction away from home computing, had forced him out; even the winner of the home computer war found it a Pyrrhic victory.

Long-term impact on the industry

The crash had two long-lasting results. First, dominance in the home console market shifted from the United States to Japan. When the video game market recovered in 1987, the leading player was Nintendo's NES, with a resurgent Atari battling Sega, also of Japan, for the number two spot. Atari never truly recovered, and finally stopped producing game systems in 1996 after the failure of the Atari Jaguar.

A second, highly visible result of the crash was the institution of measures to control third-party development of software. Secrecy against industrial espionage had failed to stop rival companies from reverse engineering the Mattel and Atari systems, and hiring away their trained game programmers. Nintendo—and all the manufacturers who followed—controlled game distribution by building copyright information into every cartridge (and, later, every disc). Would-be renegade publishers could not publish for each others' lines—as Atari, Coleco and Mattel had done—because in order for the cartridge to work, the code inside the game had to display the Nintendo copyright notice. If no copyright notice was present, the game did not work. Including the copyright notice meant the publisher falsely labeled the game as Nintendo property, exposing itself to lawsuits. Although Accolade achieved a technical victory in one court case against Sega, challenging this control, even it ultimately yielded and signed the Sega licensing agreement. Several publishers—notably Tengen (Atari), Color Dreams, and Camerica—challenged Nintendo's control system during the 8-bit era. These companies soon failed commercially. Variants of this control system remain in use on every major video game console.

Nintendo reserved the lion's share of NES game revenue for itself by limiting most third-party publishers to only five games per year on its systems. It also required all cartridges to be manufactured by Nintendo, and to be paid for in full before they were manufactured. Cartridges could not be returned to Nintendo, so publishers assumed all the risk.[7] Nintendo portrayed these measures as intended to protect the public against poor-quality games, and placed a golden seal of approval on all games released for the system. Although most of the Nintendo platform-control measures were adopted by later manufacturers like Sega, Sony and Microsoft, the others never used such strong measures to hold a larger share of the games market for themselves.

The hardware manufacturers of 2005 routinely receive $9 U.S. or more for every disk sold by licensed publishers, and defend their legal rights aggressively. This allows console manufacturers to cash in on the success of third-party publishers, and it also gives the console manufacturers control over shoddily produced, pornographic, or otherwise controversial third-party games such as Custer's Revenge that could taint the console's reputation.

Notes

1. ^ Ahl, David H. (1984). **Creative Computing,** November 1984
2. ^ See this GameSpy article
3. '^ Overconfidence likely led to many of Atari's poor business decisions during this period. Michael Hannagan of Atari is reported to have said, "I could put shit in a box and it'd sell a million copies," apparently in defense of **E.T.**s poor critical reception.
4. ^ Mattel returned to the market briefly with its acquisition of The Learning Company in 2000, only to divest it to the Gores Group less than two years later.
5. ^ Activision eventually faded as well; its name and assets were purchased by a new management team led by Bobby Kotick who built a new, highly successful, but otherwise unrelated company based on the old brand.
6. ^ Ahl, op. cit.
7. ^ As a result, some publishers lost more money due to distress sales of remaining inventory at the end of the NES era than they ever earned in profits from sales of the games.

References

- DeMaria, Rusel & Wilson, Johnny L. (2003). *High Score!: The Illustrated History of Electronic Games* (2nd ed.). New York: McGraw-Hill/Osborne. ISBN 0-07-222428-2.

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History of Video Games (8-bit Era)

In the history of video games, the **8-bit era** was **the third generation** of video game consoles, but the first after the video game crash of 1983 and considered by some to be the first "modern" era of console gaming. Although the previous generation of consoles had also used 8-bit processors, it was in this time that home game systems were first labelled by their "bits". This came into fashion as 16-bit systems like the Sega Genesis were marketed to differentiate between the generations of consoles.

During the era, the Famicom (short for family computer) became very popular in Japan. The NEC PC Engine also gained a large following, enough to support several versions of the hardware. The

Famicom's American counterpart, the Nintendo Entertainment System, highly dominated the gaming market in North America, thanks in part to its restrictive licensing agreements with developers. Though the NES dominated the market, the Sega Master System (which was popular in Brazil and Europe), and the Atari 7800, were also major players during this era.

The post-crash 8-bit era was considered "the stone age of console role-playing video games" and was the birth of the side-scroller. Editing and censorship of video games was often used in localizing Japanese games to North America. It is the era when many famous video game series, and the characters starring in them, originated. Some notable examples include Super Mario Bros., The Legend of Zelda, Metroid, Mega Man, Metal Gear, Castlevania, Final Fantasy, Phantasy Star, Bomberman, and Dragon Quest.

Consoles of the 8-bit era

Nintendo Entertainment System/Nintendo Famicom
1985-1995: U.S. 1987-1996: Europe 1983-2003: Japan 1990-Present: Nigeria
Sega Master System
1986-1991: US 1987-1989: Japan 1987-1996: Europe 1989-present: Brazil
Atari 7800
1986-1992: U.S.
NEC PC Engine
1987-1993: Japan
Amstrad GX4000
1990-1991: Europe
Commodore C64 Games System
1990-1991: Europe

Handheld Consoles

Nintendo Game Boy
1989-1995: Japan, U.S. 1990-1995: Europe
Sega Game Gear
1990-1997: Japan 1991-1997: Europe, U.S. 1992-1997: Australia

Atari Lynx
1989-1995: U.S.

Video game franchises established during this time

Alex Kidd
Battletoads
Bomberman
Bubble Bobble
Castlevania
Contra
Double Dragon
Dragon Quest
EarthBound (Mother in Japan)
Final Fantasy
FIFA Series
Gauntlet
Gradius
Kid Icarus
Kirby
Mega Man (Rockman in Japan)
Metal Gear
Metroid
Punch Out!!
Nekketsu Kouha: Kunio-Kun
Ninja Gaiden
Nintendo Wars
Phantasy Star
R-Type
Super Mario Bros.
Tetris
The Legend of Zelda
Wave Race
Wonderboy
Ys

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History of Video Games (16-bit Era)

In the history of video games, the **16-bit era** was **the fourth generation** of video game consoles. It was dominated by the rivalry between the Super Nintendo Entertainment System and the Sega Genesis, making it one of the most intense periods of competition in North American video game history. The TurboGrafx 16 was also part of this era; it had little success breaking into the fray in the North American market, but was quite successful in Japan.

The beginning

In 1989 Sega and NEC simultaneously released the Genesis and TurboGrafx 16 just before Christmas. The two systems did very brisk business despite the fact that Nintendo had about a 90% share of the market for the Nintendo Entertainment System, proving that the market was ripe for new technologies. The more powerful Genesis quickly outpaced the TG-16's sales, and took a commanding lead starting in early 1990. In 1991, Sega released Sonic the Hedgehog, in response to the impending release of Nintendo's updated system, the Super NES.

Sega advertisements during the 1991 holiday season underscored the speed of their new mascot. Also in late 1991, Nintendo released the 16-bit Super NES to compete with the Genesis. Packaged with the new system was Super Mario World, a new game from the very popular Mario franchise. The 16-bit war was born.

The "console war"

Sega and Nintendo pushed hard for advantages in the marketplace. The Sega mascot Sonic the Hedgehog was swiftly marketed as the "cooler" alternative to Nintendo's Mario. Sega coined a marketing term called "Blast Processing" that posed as a technical advantage for the Genesis. Sega advertising was very confrontational in this time, with slogans like "Sega does what Nintendon't" and the "Sega scream".

Nintendo countered with franchise games such as the Mario series, The Legend of Zelda, Star Fox, Super Metroid, and later Donkey Kong Country, and many others for the Super NES and Game Boy. Sega released *Sonic the Hedgehog 2* in 1992 amidst a huge marketing push (in the UK and US, it was released on "Sonic 2sday"), which became more popular than the first game. Less than a year later, Nintendo released enhanced remakes of the original NES Super Mario games on the Super NES titled Super Mario All-Stars.

NEC pushed the TurboGrafx 16 using their mascot Bonk. This head-banging caveman was used in most of the TurboGrafx advertising from 1990-1994. The platform was well received initially especially in larger markets in the US. In smaller metropolitan areas, the TurboGrafx was difficult to find as NEC did not have as many store representatives or as focused in-store promotion as in the larger urban areas. The Japanese version of the TurboGrafx, the PC Engine, was quite successful in Japan through the popularity of its titles available on the at the time new CD-ROM format. NEC released a CD add-on in 1990 and by 1992 had released a combination TurboGrafx and CD-ROM system known as the TurboDuo.

When the Mortal Kombat controversy hit the consoles, Nintendo decided to censor the game's gore, while Sega kept the content in the game, allowing players to access it via a special code. Nintendo had long had a policy of censorship, but now Sega began to position itself as the more "mature" console, willing to give gamers the content Nintendo deemed "not family friendly". Sega's gamble paid off, and their version of Mortal Kombat was often given higher and more favorable reviews in the gaming press. As a result of this, Nintendo reconsidered its position, and when Mortal Kombat 2 was ported to the console, all of the violence was intact.

Many (particularly younger) gamers labelled themselves as either a

Nintendo fan or a Sega fan, and the two were mutually exclusive. Even single-format magazines got in on the rivalry, with poorly constructed attacks at each other's hardware and software fuelling the flames of fanboyism.

By 1994 the TurboGrafx 16 and its CD combination system the Turbo Duo were out of manufacture in North America, though a small amount of software continued to trickle out for the platform. NEC released the 32-bit PC-FX console the same year in Japan. Plans were underway for a US release of the PC-FX but an already flooded market of platforms including the far more powerful 3DO and Atari Jaguar systems caused TTI (who had taken over running the TurboGrafx platform) to halt their North American release plans.

Add-ons

Nintendo, NEC and Sega also competed with hardware peripherals for their consoles. NEC was first out the door with the release of the Turbo-Grafx CD system in 1990. Retailing for $499.99 at release the add-on CD was not a popular purchase but was in large part responsible for the platform's success in Japan. Sega made two attempts: the Sega Mega-CD (Sega CD in the US) and the Sega 32X, neither of which were very successful. The Sega CD was plagued by a high price tag ($300 at its release) and a limited library of games. The 32X faced a number of problems, primarily technical and commercial. (The peripheral would occasionally not work with some consoles. Additionally, some retailers were not able to meet the initial demand for the add on, leading to shortages.)

Nintendo made an attempt with their successful Satellaview and Super Game Boy. The former was a satellite service released only on the Japanese market and the latter an adapter for the Super Nintendo that allowed Game Boy games to be displayed on a TV.

Interestingly, Nintendo, working along with Sony, also had plans to create a CD-ROM drive for the Super NES, similar to the Sega CD, but eventually decided not to go through with that project. The project was cancelled, and Sony used the name ("PlayStation") for their own stand-alone CD-based console, overseen by former SNES sound-chip engineer, Ken Kutaragi.

European importing

The 16-bit era was also the era when the act of buying imported US games became more established in Europe, and regular stores began to carry them. This was especially popular with SNES games, due to several reasons:

- Because PAL has a refresh rate of 50Hz (compared to 60Hz for NTSC) and a vertical resolution of 625 (compared to 525 for NTSC), a game designed for the NTSC standard without any modification will run 17% slower and have black bars at the top and bottom. Developers often had a hard time converting games designed for the American and Japanese NTSC standard to the European PAL standard. Companies such as Konami, which large budgets and a healthy following in Europe, readily optimised several games (such as the International Superstar Soccer series) for this audience, while smaller developers, or those who placed less emphasis in the European market, did not.

- Few RPGs were released in Europe because they would have needed to been translated into many different languages. RPGs tend to contain much more text than other genres, so one of the biggest problems was simply fitting all of the full translations into one cartridge. The cost of creating multiple full translations was also prohibitive.

So-called multi-x chips (modchips), which were installed in the consoles and converters, were common at this time. The chips were accessories that bypassed the built-in lockout mechanism. However, due to Super FX chips and different copy protection techniques, European consumers were often forced to buy new converters at regular intervals or "mod" (*i.e.* install a modchip) their consoles in order for the imported games to function properly.

Popular US games imported at this time:

Final Fantasy IV
Final Fantasy VI
Secret of Mana
Street Fighter II
Chrono Trigger
Super Mario RPG

The rise of franchises

While their seeds were sown in the 8-bit era, many of the major franchise titles came of age and solidified in the 16-bit era. Metroid, Zelda, Final Fantasy, Seiken Densetsu (Secret of Mana), Sonic the Hedgehog, Front Mission, Donkey Kong, Street Fighter, Mortal

Kombat, and many others had either their first releases or some of their most popular titles during the 16 bit era.

> *Metroid*: Super Metroid, released in 1994 on a 24 megabit cartridge for the SNES, was the third game in the series, after the original was released on the NES in 1986 and a Gameboy version came out in 1992. It was Super Metroid, and the detailed graphical depiction of Samus Aran, that cemented this series' success.
>
> *Zelda*: The Legend of Zelda: A Link to the Past courted popularity even larger than that of its predecessors on the NES. As well as generally being a well-made game, it was one of the few RPGs to be released early in the SNES's lifestyle. Zelda II on the NES had been mostly action-based and was side-scrolling, whilst A Link To The Past drew more inspiration from the original with its top-down action-RPG format. Zelda's mixture of action and RPG elements continues to this day.
>
> *Final Fantasy*: Despite irregular releases - only two of the four FF games produced in Japan made it to Europe and North America - Final Fantasy continued to grow in popularity in the early 1990s. Not until Final Fantasy VII on the Playstation did it reach blockbuster status outside Japan, but for a SNES title, it was a popular series. Such was the enduring appeal of the 16-bit titles, many of them are being translated and re-released for handheld systems (years after they were translated for emulator-use by enthusiasts.)
>
> *Seiken Densetsu*: This series was introduced to Europe and North America in the form of Secret of Mana, which was actually the second in the SD series (again, SD was translated by enthusiasts.) Secret of Evermore followed, to be greeted by high sales but poor reviews. The series lives on with Sword of Mana on the Game Boy Advance, showing how fond memories of SoM have created a lasting fanbase.
>
> *Street Fighter*: An arcade smash hit, Street Fighter 2 made it to the 16-bit consoles without significant loss of quality or features. Sprites were decreased in size and the backdrops lost a bit of their flashiness, but for the most part it was a faithful recreation that sold voluminous amounts. The series is still being produced today. It is worth noting that, whilst the original Street Fighter was deemed innovative and fairly

> popular, it was the second on the series that produced a lasting fanbase and a slew of - mostly sub-standard - imitations.

Seeking to follow the example of the above titles, several more franchises were born during this era, many of which have not survived to the present day. While game sequels were far from uncommon during the 8-bit era and even before, it was at this time that the potential of series games was realised.

In the end

By 1995, the 16-bit craze had started to die down due to Nintendo and Sega both having new consoles in the works, as well as "outsider" manufacturers such as Sony and Phillips. These machines were referred to in the specialist press as the "superconsoles" due to their use of then-innovative 3D graphics, and are known as the 32-bit era.

Consoles of the 16-bit era

NEC PC Engine / TurboGrafx 16
1987-1996: Japan 1989-1994: U.S.

Sega Mega Drive / Genesis
1988-1996: Japan 1990-1998: Europe 1989-1998: U.S.

SNK Neo-Geo
1989-2004 Japan 1990-2003 U.S.

Super Famicom / Super Nintendo Entertainment System
1990-2003: Japan 1991-1999: U.S. 1992-1998: Europe

Sega CD (add-on)
1991-1996: Japan 1992-1996: U.S. 1993-1996: Europe

Handheld Consoles

Nintendo Game Boy
1989-1997: Japan, U.S. 1990-1996: Europe

Sega Game Gear
1990-1997: Japan 1991-1997: U.S. 1992-1997: Europe

Sega Nomad

Video game franchises established during the 16-bit era

Breath of Fire
Bust-a-Move
Chrono
Donkey Kong Country
Dragon Ball Z
Earthworm Jim
Fire Emblem
Front Mission
F-Zero
Ganbare Goemon
Harvest Moon
International Superstar Soccer
Killer Instinct
King of Fighters
Madden NFL
Mario Kart
Mortal Kombat
NBA Jam
NBA Live
Ogre Battle
Pocky & Rocky
SaGa
Seiken Densetsu
Sonic the Hedgehog
Soul Blazer
Star Fox
Star Ocean
Street Fighter
Streets of Rage
Tales of Phantasia

See also

- Nintendo

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History of Video Games (32-bit Era)

In the history of computer and video games, the **32-bit / 64-bit era** was **the fifth generation** of video game consoles. It featured both **32-bit** and "**64-bit**" consoles, and the market was dominated by three consoles, the Sony PlayStation, Sega Saturn, and Nintendo 64 with Playstation being the most successful. Demographics in console sales varied overall but these consoles defined the System wars of this era (see section below). The 3DO and Atari Jaguar were also part of this era, but failed to make an impact like their competitors. This era also saw three updated versions of Nintendo's Game Boy: Game Boy Pocket, Game Boy Color, and Game Boy Light (Japan only).

Bit ratings for consoles largely fell by the wayside during this era, with the notable exception of the Nintendo 64. The number of "bits" cited in console names referred to the CPU word size, but there was little to be gained from increasing the word size much beyond 32 or 64 bits - performance depended on more varied factors, such as processor clock speed, bandwidth, and memory size.

The 32-bit / 64-bit era was also the era where the rise of console emulation happened. The first fan translation project, on Final Fantasy V, was released to the emulation community during this era.Transition to 3D

The 32-bit / 64-bit era is most noted for the rise of 3D games, which largely replaced the traditional 2D games of the 16 and 8-bit eras. The Nintendo 64 launch title Super Mario 64 perhaps best exemplifes this, as it was the first console game to steer the industry's focus away from side-scroll and rail-style titles to generating truly 3D environments in which the player has an unencumbered range of motion

'New school' gaming

It is the era that followed the 16-bit era. It is the birth of what some video game players call "new school" gaming, which uses 3D computer graphics. The Sony PlayStation was released in Japan near the end of the 16-bit era in 1994, and in the United States in 1995. The Nintendo 64 was released in Japan and the United States in 1996. Many critics, some of whom call themselves old school gamers, call this the beginning of an industrial revolution of video gaming, and think that SNES games are more amusing than 32-bit / 64-bit era video games and today's video games. Fundamental gameplay changes between the old school and new school era include gameplay actions revolving around more true-to-life animation (which had already been tried with Prince of Persia, but really brought to the fore with games like Tomb Raider and Tekken), instead of the quicker, cartoon-style action typical of titles like Super Mario World and Sonic the Hedgehog. Another fundamental change was the widespread adoption of CD-ROM technology which allowed more storyline content into games, possibly focusing the developers away from developing gameplay content. Storylines also started to get more complex and featured mature stories and characters, examples being Metal Gear Solid and Final Fantasy VII. The 32-bit / 64-bit era was also the time console emulation started to become popular. NES and SNES ROMs have been easier to find during the sixth generation era than they were during the 32-bit / 64-bit era.

System wars

More so than with any other era however, the 32-bit / 64-bit era was the paramount staging ground of the "system wars". The "system wars" were a phenomenon in which people would attempt to evaluate the upcoming hardware of a system and purchase the system for that reason alone, speculating that the best games must be made for that hardware. Since the length of time systems spent in development had been steadily growing since the 8-bit era, and since a growing consumer awareness was making the development process more public than at any time in the past, consumers were left with a lengthy period of time in which to speculate about the strengths and weakenesses of the consoles to be released in the next generation. Many events transpired to mislead gamers during this era, further causing controversy and bitterness over the process:

- Despite massive third party support and an unprecedented amount of hype for a first-time entrant into the industry, the 3DO Interactive Multiplayer's $700.00 pricetag prevented it from reaching the demographic of more casual gamers who chose instead to purchase one of the 3DO's more affordable contemporaries.
- The Sega 32x, an upgrade for the Sega Genesis and Sega CD that was enhanced for 32-bit gameplay, was released a year prior to the release of the Saturn, which angered consumers into buying it and then having to buy a Sega Saturn right after the 32x eventually failed and died.
- The Atari Jaguar was released in 1993 with a surprisingly successful start, but quality software for the platform arrived few and far between, with only Tempest 2000, Wolfenstein 3D, Doom, and Alien vs. Predator being standout games. The system itself being 64-bit was also controversal.

- The Nintendo 64 was announced as "Ultra 64" and two arcade games (Killer Instinct and Cruis'n USA) were released claiming to use the hardware. A famous TV ad showed a gamer chainsawing open the Killer Instinct arcade cabinet so he could take out the N64 console inside. This caused many gamers to abstain from buying systems like the 3DO, Saturn, and PlayStation, because they saw that what they thought was the

Nintendo 64 hardware was clearly superior to any of those systems. In the end, the system was completely different from that used for *Killer Instinct* and *Cruis'n USA*.

- Video game magazines constantly did side by side hardware-specification comparisons of the systems using dubious statistics. Console makers routinely boasted theoretical maximum limits of each system's 3D polygon rendering without accounting for real world in-game performance when using game AI, lighting, and texturing).
- There were more competing consoles in this era than in any era since the video game crash of 1983.

In the end, Atari, already on shaky ground, was permanently removed from the console industry, and Sega's failure in North America set itself up for a similar fate in the next round of console wars. The manufacturer was already in debt from past marketing faults.

CD vs Cartridge

During the 32/64-bit era, Nintendo's somewhat controversial decision to make the N64 a cartridge based system like its predecessors, while most every other contemporary system (Jaguar was more or less gone by then) was moving to the new CD-ROM technology. This sparked a bit of a small scale war amongst gamers as to which was better. It was mainly played out between Nintendo and Sony.

Nintendo's choice had several advantages:

1. ROM cartridges have very fast load times in comparison to disc based games. This can be observed from the loading screens that appear in many PlayStation games but are mainly non-existent in N64 versions.
2. ROM cartridges are difficult and expensive to duplicate, thus resisting piracy (albeit at the expense of lowered profit margin for Nintendo). While unauthorized interface devices between the N64 and PC were later developed, these devices are rare when compared to a regular CD drive as used on the PlayStation.
3. It is possible to add specialized support chips (such as coprocessors) to ROM cartridges, as was done on some SNES games.
4. Most cartridges store individual profiles and game progress on the cartridge itself, eliminating the need for separate and

expensive memory cards. Storing data required a cartridge battery whose energy would diminish over time, though the battery generally lasted for years.

Graphically, benefits of the Nintendo cartridge system were mixed. While N64 games generally had higher polygon counts, the limited storage size of ROM carts limited the amount of available textures, resulting in games which had a plain and flat-shaded look. Later cartridges such as Resident Evil 2 featured more ROM space, which demonstrated that N64 was capable of detailed in-game graphics when the media permitted, but this performance came late in the console war and at a high price.

The cost of producing a cartridge was far higher than producing a CD: one gaming magazine at the time cited average costs of twenty-five dollars per cartridge, versus 10 cents per CD. As a result of this, N64 games tended to sell for slightly higher prices than PlayStation games did. While most PlayStation games rarely exceeded $50, N64 titles could reach up to $70-$75. As well, the cheaper manufacturing costs and distribution costs resulting in lower costs to third party game publishers. As a result many game developers which had traditionally supported Nintendo game consoles were now developing games for the competition because of the higher profit margins found on CD based platforms.

The cartridge vs. disc debate came to an infamous climax during the release of Final Fantasy VII. Despite the fact that all six previous Final Fantasy games had been published on Nintendo systems, the series' producer, Squaresoft (now known as Square-Enix), chose to release *Final Fantasy VII* on the Sony PlayStation. This incident provided a highly-publicized denunciation of Nintendo's cartridge-based system which caused negative publicity for Nintendo.

Consoles of the 32-bit / 64-bit era

Commodore Amiga CD32
1993-1994: U.S., Europe

Laseractive
1993-1996

FM Towns Marty
1993-199?: Japan

3DO Interactive Multiplayer
1993-1995

Atari Jaguar and Atari Jaguar CD (add-on)
1993-1996: Japan, U.S., Europe

Sega 32x (add-on)
1994-1995: Japan, U.S. 1995-1996: Europe

Sega Saturn
1994-1999: Japan 1995-1998 U.S., Europe

Sony PlayStation
1994-2003: Japan 1995-2003: U.S., Europe

PC FX
1994-1997: Japan

Bandai Pippin
1995-1997: Japan 1996-1997: U.S.

Nintendo 64
1996-2002: Japan, U.S. 1997-2001: Europe

Handheld Consoles

Virtual Boy
1995-1996: Japan, U.S. (Dubiously marketed as a portable console)

Game Boy Pocket
1996-2000: Japan, U.S., Europe

Neo Geo Pocket
1996-1998 Japan

Game.com
1997-2000 U.S.

Wonderswan
1997-2000 Japan

Game Boy Light
1998-2000: Japan

Game Boy Color
1998-2003

Neo Geo Pocket Color
1998-2001 Japan: 1999-2000 U.S., Europe

Video game franchises established

1080° Snowboarding
Ace Combat
Arc the Lad
Atelier Iris
Banjo-Kazooie
Baldur's Gate
Colony Wars
Conker
Crash Bandicoot
Crusin USA
Daytona USA
Diablo
Doom PC was 32-bit
Doubutsu no Mori (Animal Forest)
Duke Nukem
Extreme G
Half-Life
House of the Dead
Grandia
Grand Theft Auto
Gran Turismo
Growlancer
Guilty Gear
Legend of Legaia
Medal of Honor
Mario Party
NiGHTS Into Dreams
Need for Speed
Panzer Dragoon
Paper Mario
Perfect Dark
Persona
Pokémon
Quake
Rayman
Resident Evil
Ridge Racer
San Francisco Rush
Silent Hill
Spyro the Dragon
Suikoden
Super Smash Bros
Syphon Filter
Tekken
Tomb Raider
Tom Clancy's Rainbow Six
Tony Hawk's Pro Skater
Turok
Unreal
Unreal Tournament
Vagrant Story
Virtua Fighter
Virtua Cop
Wild ARMs
wipEout
Xenogears

Milestone titles

- *Doom* The game that made the first person shooter genre mainstream.

- *Diablo* The world's first **Massive Multiplayer Online Role**

Playing Game and first game in the Action RPG for PC

- *Super Mario 64* was the first game released for the Nintendo 64. It helped prove that analog controllers were almost a necessity for 3D games, as opposed to the D-pad (the Playstation ran into this problem quickly). It was also the first major game to feature expansive 3D environments.

- *Final Fantasy VII* is the first game in the series to make use of FMVs (full motion videos), and it opened the door of the mainstream US market for Japanese RPG's. It signaled the convergence of film and interactive media and raised the bar in terms of production value for games. "Final Fantasy" is now one of the biggest franchises in video gaming.

- *The Legend of Zelda: Ocarina of Time* is one of the most critically acclaimed games of all time and one of the most influential action/adventure games ever. It smoothly transfered the playing mechanics of the previous 2D Zelda adventures.

- *Tomb Raider* featured a supposedly sexy female lead. It brought the video game industry the mainstream spotlight and Lara Croft became one of the most recognisable video game characters created in recent years.

- *GoldenEye 007* arguably transformed the first-person shooter genre across console and PC systems alike. Offering a more cerebral experience than genre founders and leaders (Wolfenstein 3D, Doom, Quake et al), GoldenEye 007 combined stealth and slaughter with pioneering animation and physics. Its multiplayer aspects influenced the later hugely successful Halo series.

- *Pokémon* was the biggest money-maker for Nintendo. It created a cultural phenomeon amongst young children that brought a huge amount of Pokémon trading cards and assorted merchandising. Its TV show was also very popular and led to several movies. It paved the way for Digimon and Yu-Gi-Oh.

- *Metal Gear Solid* was released on the PlayStation in the Fall of 1998. It received critical acclaim for its involved storyline, believable voice acting, and cinematic presentation.

- *Unreal Tournament* The first widely accepted online deathmatch game for PC. Brought Capture the Flag and Assault to the first person shooter genre.

See also

- Nintendo

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History of Video Games (Seventh Generation Era)

The **seventh generation era** (sometimes referred to as the **HD era** or the **Touch! Generation**) is a video game era in the history of computer and video games that began towards the end of 2004, but is not set to really take off until late 2005/early 2006 with the release of new video game consoles from Microsoft, Nintendo, and Sony, the three current major console manufacturers.

For video game handhelds, the seventh generation began roughly with the release of Nintendo's Nintendo DS, a system based on a design fundamentally different from the Game Boy and other video game systems where the user is able to control the movement of characters and the action in a game through the use of a touch screen and dual screens, and also use his own voice through the microphone controller. It was released in late 2004. In late 2004 Sony released their first handheld in Japan, the PlayStation Portable, trying to challenge Nintendo's long time dominance in the handheld market, but unable to overtake it. However, it breached the handheld market with a high-tech-gadget concept, providing not only games, but also movies and music, to the owners. It subsequently was released in North America and remaining regions in 2005. Also in 2005 was the release of the Gizmondo from Tiger Telematics and the GP2X from Gamepark Holdings.

The HD era

Microsoft has dubbed this era, at least for their video game console, as the high-definition (HD) era. Both consoles by Sony and Microsoft will support HD output in 720p and 1080i optimized for 16:9 aspect ratio. In addition, Sony has announced that the PlayStation 3 will have support for 1080p, a higher-level HD resolution that has not yet been fully realised. Nintendo on the other hand has said they will not support HD.

Video game systems

Video game consoles

The seventh generation of video game consoles began with the Xbox 360, which was released November 22, 2005. The next Nintendo unit (codenamed Nintendo Revolution) and the PlayStation 3 are due out in 2006. No specific release dates have been announced for the PS3 or the Nintendo Revolution, although it is commonly speculated that the PS3 may be released as early as the spring in Japan.

While Microsoft and Sony are clearly in the move to achieve technological supremacy, Nintendo is holding back, using innovation as fighting banner.

Microsoft Xbox 360
2005–Present

Nintendo Revolution
2006

Sony PlayStation 3
2006

Video game handheld

Video game handhelds released during the seventh generation era include:

GP2X
2005–Present

Nintendo DS
2004–Present

Sony PlayStation Portable
2005–Present

Tiger Telematics Gizmondo

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History of Video Games (Sixth

Generation Era)

The **sixth-generation era** (sometimes inaccurately referred to as the **128-bit era**; see section below) refers to the computer and video games, video game consoles, and video game handhelds available at the turn of the 21st century. Platforms of the sixth generation are the Sega Dreamcast, Nintendo GameCube, Sony PlayStation 2, and Microsoft Xbox.

Video game handhelds

During the sixth generation era, the handheld game console market exploded, with the introduction of new devices from many different manufacturers. Nintendo maintained their large market share of the handheld market with the release in 2001 of the highly upgraded Game Boy called the Game Boy Advance. Two redesigns of this system followed. The first, the Game Boy Advance SP in 2003 and the second, the Game Boy Micro in 2005. Also introduced was the Neo Geo Pocket Color in 1998 and Bandai's WonderSwan Color launched in Japan in 1999.

A major new addition to the market was the introduction of features not exclusive to the video game industry. Everything from cell phones, MP3 players, portable movie players, to Palm Pilot-like features. The first of these was Nokia's N-Gage, which was released in 2003 and doubled primarily as a mobile phone. It subsequently went through a redesign in 2004 and was renamed the N-Gage QD. A second handheld, the Zodiac from Tapwave was released in 2004 and was based on the PalmOS; it added numerous features typically found in PDAs.

With more and more PDAs arriving last generation, the difference between consumer electronics and traditional simplified and cheap console technology grew. Multi-task PDAs are said to be the computers of handheld gaming because of their multi-purpose capabilities and dominant computer hardware. New console technology was reinstituted when Nintendo DS hit the market by introducing portable "32-bit era" last generation console technology as an affordable item for the consumer. As of last generation, the video-game market had only rendered "16-bit era" graphics to target the gamer as opposed to the business man. PDAs and Palm Pilots were ahead of the market in sheer graphical power but lacked affordable and new software franchises to back their hardware up.

With more and more handhelds arriving towards the end of this generation, it gets harder to locate exactly where the sixth generation ends and where the new seventh generation begins. It is believed that the seventh generation began in late 2004 with the introduction of Nintendo's Nintendo DS and Sony's PlayStation Portable.

Video game handhelds released during the sixth generation era include:

Neo Geo Pocket Color
1998 – 2003

Bandai WonderSwan Color
2000 – 2003

Nintendo Game Boy Advance
2001 – 2003

Nintendo Game Boy Advance SP
2003 – Present

Nokia N-Gage
2003 – 2004

Nokia N-Gage QD
2004 – 2005

Game Boy Micro
2005 – Present

Note: First year of release is the first year of the system's availability in the world.

Emu and Retro gaming

Due to the increased usage of emulators and the increasing ease of finding ROM images of previous video game consoles, most notably the Nintendo Entertainment System, the Super Nintendo Entertainment System, the Sega Master System, and the Sega Genesis, the sixth generation of consoles coincided with the rise of console emulation.

It is also a time when an increasing number of retro games are being enhanced or redistributed on newer systems. Enhanced remakes occur mostly on consoles, while redistributions occur mostly on handhelds. While the enhanced remake idea was actually devised during the 16-bit era with Nintendo's Super Mario All-Stars, it was popularized during this era. Examples of the redistribution idea include Nintendo's introduction of a line of "classic" NES and SNES games for their Game Boy Advance handheld. Examples of the enhancement idea include Wild ARMs: Alter Code F, Square Enix's Final Fantasy Origins, and Nintendo's Metroid: Zero Mission. Also an increasing number of third-party developers releasing anthology collection games such as Midway Games, Capcom, Namco, Atari, and Sega, even though Atari and Sega both released new, enhanced versions of their retro titles. Additionally, this is also a time when certain video games or video game series that were originally confined to Japan came to North America and Europe.

Video game systems

Video game consoles

Video game consoles released during the sixth generation era include:

Sega Dreamcast
1998 - 2002

Sony PlayStation 2
2000 - Present

Nintendo GameCube
2001 - Present

Microsoft Xbox
2001 - Present

Note: First year of release is the first year of the system's worldwide availability.

PlayStation 2 dominated sales, with 100 million units shipped to retailers. Xbox was a distant second, with 22 million units, and Nintendo kept in close competition with 18.5 million GameCubes sold during the same period.[1] The Sega Dreamcast sold roughly 16.9 million consoles despite its shorter lifetime.

Number of bits

Bit ratings for consoles largely fell by the wayside after the 32-bit era. The number of "bits" cited in console names referred to the CPU word size, but there was little to be gained from increasing the word size much beyond 32-bits; performance depended on other factors, such as processor speed, graphics processor speed, bandwidth and memory size.

The Sega Dreamcast, the first of the "128-bit" consoles, has a dual-issue 32-bit CPU core, 64-bit GPU, and 64-bit data bus although the geometry sub-processor GPU can perform internal math on 128-bit words. One of the PlayStation 2's many processors is known as the "128-bit Emotion Engine" but has a dual-issue 64-bit core; the graphics synthesizer has a 2560-bit DRAM bus. The Microsoft Xbox, the most powerful of the sixth-generation era consoles, uses a 32-bit CPU and 256-bit GPU, a configuration that is becoming standard in many desktop PCs. The importance of "bitness" in the modern console gaming market has thus decreased due to the use of components that process data in varying word sizes. It is also important to note that most game companies sell on "n-bit talk" to over emphasize the hardware capabilities of their system. The Sega Dreamcast and the PlayStation 2 were the last systems to use the term "128-bit" in their marketing to describe their capability.

Video games

Three horse race

Major developers such as Electronic Arts and Activision for the most part released games covering the PC, Xbox, PlayStation 2, and GameCube. Notable cross-platform games released every year include EA Sports and the Tony Hawk series.

Controversies

The sixth generation era became the most controversial, with extensive criticism of "objectionable" content such as sex, crime, violence, profanity, and drug use as well as topics of debate such as religion, politics, feminism, and economics. Such controversies are hardly unique to the sixth generation, and go back at least as far as 1994 with Mortal Kombat and Night Trap. The earliest occurrence of such public outcry was in 1976 with the arcade game Death Race.

The sixth generation was notable because it spurred lawmakers into taking action against the video game industry. The most infamous was the Grand Theft Auto games with Grand Theft Auto III and Grand Theft Auto: Vice City facing lawsuits over allegedly racial slurs and influencing minors to commit crimes, while Grand Theft Auto: San Andreas was briefly given an adult rating and banned from stores over the availability of an abandoned sex mini-game using the Hot Coffee mod.

The sixth generation also began just prior to the September 11, 2001 attacks in New York City and The Pentagon, which had a huge impact on the entertainment industry as well as the video game industry forcing many games to be toned down. Most notably Metal Gear Solid 2, which prior to its release depicted the destruction of the Statue of Liberty and a good portion of Manhattan. Similarly, Grand Theft Auto III also had to modify its rendering of Manhattan, as well as changing the colour scheme of police cars (the old scheme resembled that of NYPD's older blue and white design).

Franchises started

Amped
Animal Crossing
Baten Kaitos
Battlefield series
Boktai
Brothers In Arms
Burnout
Call of Duty
Crazy Taxi
Crimson Sea
Dark Cloud
Devil May Cry
Deus Ex
Disgaea
Fable
Fatal Frame
Far Cry
Icewind Dale series
The Getaway
Golden Sun
God of War
Halo
Hitman
Jade Empire
Jak and Daxter
Jet Grind Radio
Katamari Damacy
Kessen
Kingdom Hearts
Max Payne
Magna Carta
Mech Assault
Midnight Club
MotoGP
Neverwinter Nights
NBA Street
NFL Street
NFL 2K
Onimusha
Pikmin
Project Gotham Racing (Metropolis Street Racer)
Project Snowblind (unofficially Deus Ex Clan Wars)
Ratchet & Clank
Rallisport Challenge
SEGA GT
Shenmue
Sly Cooper
SOCOM
Soul Calibur
Soul Reaver on Dreamcast
Splinter Cell
SSX
Super Monkey Ball
TimeSplitters
Tom Clancy's Ghost Recon
Tom Clancy's Splinter Cell
Viewtiful Joe

Milestone titles

- *Halo* was the Microsoft Xbox's most successful launch title.

Many people consider it to have revolutionised the first-person shooter, and many of its features (such as limited weapon "slots") were incorporated into later FPSs. Its sequel Halo 2 set records as the highest grossing release in entertainment history [2] and was a very successful killer app for the Xbox Live online gaming service.

- *Grand Theft Auto III* and its sequels for PlayStation 2 (later Xbox) brought violence and other "objectionable" content in video games back into the mainstream spotlight, thus reviving the video game controversy. The series remains the highest selling franchise in the US for the past ten years. It signalled the prominence of mature gamers in today's market.
- *Metroid Prime* remains one of the Nintendo GameCube's highest rated titles, as well as an outstanding example of how cooperation between Nintendo and a second-party studio revived a long-time franchise.
- *Soul Calibur* for the Sega Dreamcast is widely considered one of the greatest fighting games of all time, and is the only game of its genre, on any platform, to have ever received a perfect 10.0 rating from IGN.com.

References

- ^ The Xbox factor, a November 22, 2005 article from The Economist

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PC Games

A **personal computer game** is a form of interactive multimedia used for entertainment played on a personal computer. Presently, the term more accurately encompasses games that run on general purpose computers, including certain earlier home computers models, which are capable of operating other applications besides computer games.

Like console games, personal computer games primarily require a processing devices contained in a computer case, a display device in the form of a computer display, and input devices in the form of a keyboard and mouse by default to function. However, at present, such hardware may be obtained as a set, along with additional audio devices, graphic accelerators, and network devices. The modularity of a personal computer also allows for significantly easier hardware upgrades.

Personal computer game are usually distributed using standard storage units for personal computers, such as compact discs and most recently, DVDs. Floppy disks have also been widely used in the past, and certain games are also distributed via the Internet.

Overview

Games have been around on personal computers (PCs) for about 30 years, evolving from text-adventures such as the 1976 game Adventure to the almost-ubiquitous video games of today. Many PC games released recently are also available on dedicated games console platforms, like the Xbox, PlayStation 2 and GameCube but current PCs are more powerful than games consoles (with the notable exception of the Xbox 360), often resulting in the option for more detailed graphics or AI in the PC versions. The vast array of customisation available to a PC makes PC game software piracy a much bigger problem than with other forms of video gaming.

History

The history of computer games has not received much attention from researchers. Although one might expect a consensus on such a 'young' research area, many details are more than cloudy. Which game, for example, was the first?

The usual answer is Spacewar. In the 1960s computers were a luxury for the few. The machines were enormous and usually exclusive to research institutions or the military. In 1961, MIT students Martin "Shag" Graetz and Alan Kotok, with MIT employee Stephen "Slug" Russell, used a computer for statistical calculations for employees at the university. However, he and his friends had another interest; they were devoted fans of Edvard E. Smith's science-fiction saga Skylark. With this saga fresh in memory they constructed Spacewar.

In 1976, the first adventure game was born Adventure (Crowther and Woods 1976) and was purely text-based. With the arrival of the mouse, textual interaction was replaced by graphical interfaces. In the 1980s, strategy games gained popularity in the wake of successes such as Sid Meier's Pirates! (MicroProse, 1987) and SimCity (Maxis, 1987). The FPS genre was created with the release of Wolfenstein 3D (id

Software, 1992) and remains one of the highest-selling genres today.

The first generation of games lacked the polish and AI seen in modern video games. They were text games where the player communicates with the computer by typing the direction in which to move. Nowadays these are known as interactive fiction. The first text-adventure, *Adventure* was created 15 years after Spacewar, but unlike the original Spacewar it could be played on a computer you could have in your house. The next generation of PC games were a hybrid of text and static graphics, commonly seen in the SSI [gold box] games like the original *Pool of Radiance*.

With advances in technology other game types were developed as computers became powerful enough to control and render more moving objects. Some were based on the IBM PS/2 Model 30 - with a 20 megabyte hard drive and 256 color MCGA graphics. Many currently popular, highly graphical mouse-based games originated on the Amiga computer platform since it had the most advanced colour graphic and animation capabilities of its time of introduction in 1985. Sequels to titles like Leisure Suit Larry and SimCity are still popular today. Other games included flight simulators (Comanche, Microsoft Flight Simulator series), Microsoft Game's Mechwarrior series, and strategy games (Command & Conquer, StarCraft, Warcraft). Around the same time, 16-bit systems had little capability to create 3D texture maps. However, systems did have enough power to use simple flat-shaded polygon environments, often a selling point in flight simulators and racing games of the time.

In the early 1990s third-party developers created shareware demos of games, usually allowing people to play the first section of the game for free and requiring payment to play the rest. Apogee Software was one company that distributed shareware demos on disks and later through the Internet. These have since been replaced by free downloadable demos of games, or demos that come with gaming magazines.

While leading Sega and Nintendo console systems kept their CPU speed at 3-7 MHz, the 486 PC processor ran at a much faster 66 MHz allowing it to perform many more calculations. 1993's 3D PC-based first-person shooter Doom was a breakthrough in graphics and design while consoles still had 2D side-scrollers like Nintendo's Mario series. As technology grew more sophisicated, dedicated games consoles caught up with the advances made by personal computers, paving the way for third-party developers to share game franchises like MDK between the different platforms,

Many early PC games included extras like the peril-sensitive sunglasses that shipped with The Hitchhiker's Guide to the Galaxy. By the mid-90s these extras had been dropped for a long time but many games were still sold in the traditional over-sized boxes that used to hold the extra "feelies".

The added competition from console games and the early 2000s explosion in computer game development was the trigger to redesign this packaging and by 2001 PC games were almost exclusively sold in smaller DVD-sized game boxes.

PC Game Development

Noteable Developers

Developers of PC Games can be split into two distinct groups, Development Teams or Studios and the individual Programmers of those teams. Listed below are a number of influentual or noteable developers of PC Games.

Development Groups/Companies:

iD Software - Developed the Doom and Quake series
Valve - Developed Half-life and Half-life 2
Bullfrog_Productions - Developed Dungeon Keeper, Theme Park (game) and Populous
Lionhead Studios - Developed Black & White and Fable
MicroProse - Developed Civilization and Railroad Tycoon
Firaxis - Developers of Civilization III and Sid Meier's Pirates!
Blizzard Entertainment - Developers of the Diablo series, Starcraft and games set in the Warcraft Universe
Epic Games - Developers of the Unreal series
Maxis - Developed the SimCity series and The Sims and sequels.

Programmers:

John Carmack - Employed by iD Software, worked on all iD Software PC Games
John Romero - Has been employed by iD Software (working on early Quake and Doom series games), Ion Storm whilst creating Daikatana, and recently Midway Games.
Gabe Newell - Lead programmer for Valve software
Sid Meier - Has been employed by Microprose and worked on many of their games, has since founded Firaxis and further developed sequals to earlier series'
Will Wright - Lead programmer for Maxis, developed SimCity and The Sims
Peter Molyneux - Lead developer for Lionhead Studios, and previously Bullfrog Productions
Tim Sweeney (game developer) - Developer for Epic Games, built the Unreal Engine

Distribution media and marketing

Traditional

Typically, games are distributed via storage media that would be standard to personal computers, and distributed to local retailers. Different formats of floppy disks were initially the staple storage media of the 1980s and early 1990s, but has largely fallen back in practical use as the increasing sophistication of computer games also increased the overall size of the game's data and program files.

Compact discs have largely replaced the role of floppy disks, supporting a rough total of 600 to 700 megabytes of data, sufficient for many computer games released during the 1990s, although a handful of such games had utilized multiple CDs, such as the two CD Command & Conquer set, which contained missions and video cut-scenes for one of the two warring factions in each of the CDs.

Towards the late 1990s, the size of games and introduction of complex graphics engines once again forced developers to release games in multiple CDs. DVDs have been eyed as the next compact storage media to replace CDs for personal computer games, as a single-layer DVD can store 4.7 gigabytes, far more than a CD would, as well as the increasing availability of DVD drives in newer personal computers. To date, CD and DVD formats are still offered for certain games.

Shareware

Shareware distribution, whilst common in the early stages of the computer game industry, has near all but disappeared for all major production companies as a form of distributing their product. In the early 1990s it was common for fledging game companies to use the shareware model to distribute their games (notable examples include Apogee Software, Epic Megagames and id Software). The trend that smaller, 'up and coming' or garage developers has since continued to help these smaller companies distribute their media and gain popularity. However, it is not common for established development teams to use shareware in the current market. Shareware today does not exist as much in its traditional meda-based form, but it has been adapted to games available exclusively through the Internet, with the same try-before-you-buy intention. PopCap Games, in particular, has used the shareware model to great sucess.

Web-based delivery

Games are common on the Personal Computer, from card, chess and poker games, to online Macromedia Flash games. Some games use HTML coding or JavaScript as a common creative tool for popular games like Chess, and casino games. Most games on the Internet offer the relief of bordem inconjuction with newly developed concepts. A good example is iSketch, and thousands of other games are created from this type of web-based software.

Service-based delivery platform

Gametap

Steam

Steam is a Internet server where consumers can buy their games online and download them directly to their console without buying the disk. Seventh generation video game consoles will most likely implement this feature as well.

Piracy and warez

Software piracy has come to include the distribution and sale of computer games that are copied on to CD-Rs or DVD-Rs. The lack of enforcement on such storage media has resulted in common "ripping", or duplication, of original games; while hacking tools widely available on the Internet has aided in the creation of codes bypassing copy-protection. This has largely created flourishing businesses in parts of the world that cater to the production and distribution of illegally copied and distributed software and games, usually done for profitable ends.

Other ways of hacking usually requires less effort in hacking the code by obtaining it through other users in mIRC channels, and open networks like Kazaa. Unauthorized distribution of copyright software is generally considered illegal, but when it is given away for free use it is not. Pirated software has disabled features in games such as online play because hacked code is not of the original, and has largely prevented users of pirated games from fully utilizing the game's multiplayer.

Emulators

Emulators are software based content from the internet for PC and Console gameplay. They mostly consist of old school videogames, or of old arcade games from systems and arcades that are no longer playable. Because of its hard accessibility and its distribution of copyright material, emulators are mostly pirated or for private nolstagia.

Expansion packs

Expansion packs are add-ons to an existing game. Expansion packs generally add new content like: units, missions, maps, and/or areas. Since they are just designed to add new content to a game, the original game is needed in order to utilize an expansion pack.

Popular and notable genres of PC gaming

Personal computers, due mostly to input available from the keyboard, mouse, and third-party joystick peripherals, have been the home genres of games that have never proved popular on video game consoles. The PC, due to its relative advanced hardware compared to video game consoles, has seen the development of new genres of gaming not possible on other systems at the time. The most notable example of this is the first-person shooter. Some games, such as SimCity and Wing Commander have been ported to console, but to lessened, if any, success. The genres that are popular today are in stark contrast from the games that were popular throughout the 1980s and 1990s. Adventure games and turn-based games used to be very popular, but have been since usurped by games that focus more on reflex as opposed to critical thinking.

- **First-person shooters**::
    - **Action Shooter**:
      Notable examples: Wolfenstein 3D, Descent, System Shock, Doom, Half-Life
    - **Squad-based Shooter**:
      Notable examples: Delta Force, Ghost Recon, America's Army
    - **Tactical Shooter**:
      Notable examples: Project I.G.I.: I'm Going In, Splinter Cell, Raven Shield

- **Strategy**:
    - **Real-time strategy**:
    Notable examples: Dune II, StarCraft, Age of Empires
    - **Turn-based strategy**:
    Notable examples: Civilization, Worms, Heroes of Might and Magic
    - **God game**:
    Notable examples: SimCity, Populous, The Sims, Black & White

- **Massively multiplayer online game** *(MMO)*:
    - **MMO-Role-Playing Games** (MMORPG):
    Notable examples: Ultima Online, EverQuest, World of Warcraft
    - **MMO First-Person Shooter** (MMOFPS):
    Notable examples: World War II Online, PlanetSide

- **Sports games**:
    - **Sports management game**:
    Notable examples: Football Manager, Championship Manager, Total Club Manager, Out of the Park Baseball

- **Simulation games**:
    - **Military tactical strategy/simulator**:
    Notable examples: Harpoon, 688 Attack Sub, Steel Panthers
    - **Buisness Simulators**:
    Notable examples: Railroad Tycoon, Theme Park
    - **Real-life simulation**
    Notable examples: Falcon 4.0, Microsoft Train Simulator, Live for Speed

- **Traditional game**:

Notable examples: Microsoft Solitaire, Battle Chess, Nibbles, Bejeweled

- **Text-based game**:

Notable examples: Zork, NetHack, Legend of the Red Dragon

- **Adventure game**:

Notable examples: King's Quest, Sam & Max Hit the Road, Bioforge

- **Computer role-playing game**:

Notable examples: Wasteland, Ultima VI: The False Prophet, Fallout, Dungeon Siege

Characteristics unique to PC gaming

Moddability and user-created content

Computer games have a large and active following of mod communities. This may be attributed to easier access to the games' coding and perimeters using editing tools, courtesy of the personal computer's capability to run non-gaming programs. Also, easier access to the Internet using a personal computer may help make games modding and mods more accessible to common computer gamers.

Modding had allowed much of the community to produce game elements that would not normally be provided by the developer of the game. This may include objectionable contents that are related to sex and violence.

In the case of the PC port of Grand Theft Auto: San Andreas, a third party modification was found to enable a disabled sex mini game abandoned by the developers of the game. While it was also revealed that the mini game was unlockable using third-party tools in the console port of the game, the availability of the mod through the Internet may had helped garnered more publicity and controversy, and forced the game to be re-rated, recalled, and criticized by computer and video game critics such as attorney Jack Thompson.

Rich user experience

Through the availability of peripherals exclusive to PC gaming, many gamers are able to receive a richer experience than available on other platforms. Such examples are... Some gamers today go to great lengths to achieve realism or the best experience possible; several people hook up 4 to 12 LCD panel displays in order to see a cockpit, in Microsoft Flight Simulator, for example Thrustmaster has long supported PC's with its creation of authentic flight joysticks, throttles, and peddles which allow gamers to control their plane/tank/car in a more realistic manner.

More players in online gaming

As personal computers pioneered the concepts of multiplayer gaming, and especially online gaming, it is logical for this platform to see a deeper extent of online gaming than its console bretheren. PC games support many more players, on average, than the equivalent console game. Battlefield 2, for example, supports up to 64 players in its PC incarnation, but only 32 players in its console version, Battlefield 2: Modern Combat. In fact, QuakeWorld, which premiered in 1997, allowed 64 players at a time when console didn't even have internet gaming capabilities. MMORPGs on the PC platform allow for hundreds of simultaneous participants in any given area, with thousands of players across the game world. This ability for more participants is not due to bandwidth, but do to superior processing and storage capabilities compared to video game consoles.

Preferences

PCs are popular for console emulation play and for setting up as game systems. The variety of third party controllers and adapters, like the Gravis gamepad, Microsoft Sidewinder and flightsticks show the superior feel for comfortable controls. The Radeon card series have the ability to hook up Digital Visual Interface imputs to high-definition television for superior gaming and high resolutions in the living room as well. While systems have come close to having the ability of playing games on a monitor, keyboard and mouse (see Sega Dreamcast), they have not been able to emulate the feel of gaming in both the living room and office environment.

Computer gaming hardware

Hardware

Most setups will include a keyboard and mouse. Other common gaming peripherals are headset and microphone for faster communication with teammates or opponents in online games, joysticks for flight sims and steering wheels for driving games.

PC games have to deal with the constantly-improving PC hardware market that makes it potentially confusing for game buyers to tell if a new game is compatible with their machine. New CPUs and graphics cards are coming out all the time and many games have a minimum hardware requirement, with successive new releases often requiring newer and faster processors or graphics cards. Unlike consoles, a 3-year-old PC will not be able to run the latest games. Unfortunately, many PC owners buy pre-packaged PCs and simply don't know the speed of their computer's processor or graphics card. Even if they do, the complexities of trying to deal with all the possible configurations of graphics card, processor, motherboard and RAM can lead to PC games being much more buggy than their console counterparts.

Operating systems

At present, computer games commonly require a specific operating system such as Microsoft Windows to function. Mac and Linux operating systems have significantly less support than Windows among the big game developers but compatible versions of popular games are becoming more commonplace. As of 2005, very few companies publish or port tiles to the Mac OS; the most notable publisher is Blizzard Entertainment. The Macintosh has seen some notable titles being its exclusive domain, most notably the Marathon series developed by Bungie (of Halo fame). Even with more titles being made for the Apple platform, it typically takes over a year for the titles to reach the system. Even fewer companies publish Linux versions; iD Software and Epic Megagames are the only major commercial game developers to make available Linux versions of their titles.

Installing and running computer games has become much easier with recent operating systems. Many gamers remember in the late 1980s and early 1990s, having to utilize boot disks in order to free up enough RAM to get the games to run. Moreover, specific hardware drivers, presently, with the advanced hardware architecture of modern operating systems combined with graphical platforms like DirectX have made computer games much easier to configure and run properly on a multitude of hardware.

Many older games of the 1980s and early-to-mid 1990s became incompatible with Windows 2000 and Windows XP, even when utilizing the built-in backwards compatibility modes. This is due to the internal structure of the operating systems being changed from where hardware could be directly accessed, to where it has to go through the hardware abstraction layer. Recently, a freeware DOS emulator entitled DOSBox has allowed many of these previously incompatible titles to yet work again. DOSBox is also compatible on Linux, opening up a wealth of software titles which were previously unavailable. In 2004, a commercial product entitled WineX was launched which allows many modern games to run on Linux, even though they are designed for the Windows platform.

Multiplayer

Support for networked multiplayer through Internet or LAN connections has become a requirement for many genres, like first person shooters, real-time strategy and racing games. The Internet has also allowed the creation of massively multiplayer online games supporting hundreds to thousands of simultaneous players.

Cultural impact

Japan

Many Japanese gamers view personal computers as a business tool, and that games are best played on dedicated hardware. However, some genres like bishMjo games are popular. The MSX Computer series also impacted the future of games for computers and consoles alike.

UK and US

Gamers in the UK and US have embraced PC games from their inception and most PC games are developed in these countries. Among hardcore gamers there has traditionally been a subset of this group who will spend tremendous amount of money upgrading their PCs several times a year, just to keep up to date with the latest technological developments in gaming.

Most Western gamers play PC games over the Internet in the comfort of their own homes or bring their own PCs to designated places (e.g. someone's home, or a commercial venue) to play against each other in a Local Area Network. These gatherings are known as LAN parties and have the benefit of much faster connection and response times than playing over the Internet, as well as feeling much more social.

Southeast Asia

LAN parties are less common in Southeast Asia, with the majority of competitive PC gaming going on in LAN gaming centres, particularly in Singapore, Malaysia and South Korea. These are much more prevalent than in the western countries and can sometimes occupy an entire floor of a shopping centre. They allow gamers to play competitively without the technical knowledge required to set up the

LAN as well as providing access to Internet games. This can allow gamers in MMORPGs or team FPS matches to coordinate much more effectively than if they were communicating through headsets. They avoid potentially crippling communication problems such as lag.

Screenshots

Zork I
(pictured running on a modern emulator)
Infocom (1980)

Elite
David Braben and Ian Bell (1984)

Minesweeper
Robert Donner (1989)

Secret of Monkey Island
LucasArts(1990)

Stunts
Brøderbund (1990)

DooM
id Software (1993)

Civilization II
MicroProse (1996)

Command & Conquer: Red Alert
Westwood (1996)

Ultima Online
Origin Systems (1997)

Grand Theft Auto
DMA Design (1997)

The Sims
Maxis (2000)

Microsoft Flight Simulator 2004

Adventure Games

Adventure is a genre of video game typified by exploration, puzzle-solving, interaction with game characters, and a focus on narrative rather than reflex-based challenges. The vast majority of adventure games are computer games, though console-based adventure games are not unheard of. Unlike many other game genres, the adventure genre's focus on story allows it to draw heavily from other narrative-based art forms, such as literature and film. Adventure games encompass a wide variety of literary genres, including fantasy, science fiction, mystery, horror, and comedy. Notable adventure games include Zork, King's Quest, The Secret of Monkey Island, and Myst.

Adventure games are similar to computer role-playing games (CRPG's), except that the game play is more focused on problem-solving rather than combat and statistics. In general, games that involve the management of player attributes and statistics are considered to be CRPG's, while those that focus solely on puzzles and narrative are considered to be part of the Adventure category. It should be noted, however, that this distinction is an extremely loose one, and many games blur the line between the two categories. In particular, the status of what are sometimes called action-adventure games as members of the category is largely in doubt, with adventure gaming purists (And, to a lesser extent, action gaming purists) labeling action-adventure games as belonging to neither the action nor adventure genres rather than to both.

Most adventure games are designed for a single player, since the heavy emphasis on story and character makes multi-player design difficult.

The adventure genre was quite popular during the late 1980s and early 1990s, and many considered it to be among the most technically advanced genres. Indeed, adventure companies like Sierra pursued technologies for their games (such as hand-drawn backgrounds, rotoscoped animation, and in-game video) that were more advanced than most other genres at the time. However, the release of the Sony Playstation marked the end of the adventure era; as 3D became the dominant graphics format, the mostly 2D adventure market began to shrink. Though a few developers continue to produce adventure games, the genre is now almost entirely confined to sub-genres such as survival horror.

History

Colossal Cave Adventure

In the early 1970s, programmer, caver, and role-player William Crowther developed a program called Colossal Cave Adventure. An employee at Bolt, Beranek and Newman (BB&N), a Boston company involved with ARPANET router's, Crowther used BBN's PDP-10 to create the game. The game used a text interface to create an interactive adventure through a spectacular underground cave system. Crowther's work was later modified and expanded by programmer Don Woods, and Colossal Cave Adventure became wildly popular among early computer enthusiasts, spreading across the nascent ARPANET throughout the 1970s.

The unique combination of Crowther's realistic cave descriptions and Woods' addition of fantastical elements proved immensely appealing, and defined the adventure game genre for decades to come. Swords, magic words, puzzles involving objects, and vast underground realms would all become staples of the text adventure genre.

The "Armchair adventure" soon spread beyond college campuses as the microcomputing movement gained steam. Numerous home-brew knockoff's and variations on Colossal Cave Adventure (which eventually came to be known as simply *Adventure*) appeared throughout the late 1970s and early 1980s.

Scott Adams

One of the many fans of the Colossal Cave was programmer Scott Adams. Upon his first introduction to Adventure, Adams spent almost ten days traversing the game before he achieved Grand Master status. Once he had completed the game, Adams began to wonder how a game like Colossal Cave Adventure could be developed on a home computer like his TRS-80. The main obstacle was that home computers such as the TRS-80 did not actually have sufficient memory to run a large game like Adventure. However, Adams hit on the idea that an adventure game could be described as an interpreter, much like the BASIC language. Furthermore, once an interpreter was developed, Adams realized that it could be reused to develop other adventure games.--Details of Adams's early work.

In 1978, Adams founded Adventure International and produced twelve adventure games before the company went bankrupt in 1985. His first games were text-based and written in BASIC, but during his third game (Mission Impossible), Adams began programming in assembly language to improve the speed of his software.

Graphical progress

The great advance which immediately followed was the introduction of images. With the use of machine language allowing shorter programs, and computer memory increasing, it became possible to use the graphical potential of a computer like the Apple II and some companies soon switched from producing pure text-based adventure games.

Soon the clumsy basic vector graphics gave way to more aesthetic imagery drawn by professional artists. Examples include:

Return of Herakles by Stuart Smith (1982) (which faithfully portrayed Greek mythology)
Sherwood Forest (1982),
Dale Johnson's Masquerade (1983),
Antonia Antiochia's Transylvania (1982, re-released in 1984)
Stuart Smith's follow-up to Herakles, Adventure Construction Set (1985), one of the early hits of Electronic Arts. The full-length adventure that came with the software, Rivers of Light, was based on the legend of Gilgamesh.

The introduction of such high-quality bitmap graphics required more substantial storage capacity with many adventure games requiring several diskettes for installation, which would be the case until the CD-ROM made its appearance.

Infocom

In 1977, two friends Dave Lebling and Marc Blank, who were students at the Massachusetts Institute of Technology's Laboratory for Computer Science, discovered Crowther and Woods's game Colossal Cave Adventure. After completing the adventure game, they were joined by Tim Anderson and Bruce Daniels and began to develop a similar game. Their first production, Zork, also started on a PDP-10 minicomputer and spread quickly across the ARPANET. Its success was immediate, and the game, which would reach the size of a megabyte, enormous for the time, would be updated until 1981.

On graduation, the students decided to stay together and to form a company. Tim Anderson, Joel Berez, Marc Blank, Mike Broos, Scott Cutler, Stu Galley, Dave Lebling, J. C. R. Licklider, Chris Reeve, and Albert Vezza created Infocom on 22 June 1979. The idea of distributing Zork came to mind very soon, but the game was too big to port to the microcomputers of the time: the Apple II and the TRS-80, the potential targets, each had only 16 kb of RAM. They wrote a special programming language called Z-machine, which could function on any computer by using an emulator as an intermediary.

In November 1980 the new Zork I: The Great Underground Empire was made available for the PDP-11; One month later, it was released for the TRS-80, with more than 1,500 copies sold between that date and September 1981. That same year, Bruce Daniels finalized the Apple II version and more than 6,000 additional copies were sold. *Zork I* would go on to sell over a million copies.

The company continued developing text adventure games even as it opened a department for the development of professional software, a department which would never be profitable. High-quality games, with massive, intelligent plots, unequaled syntax analyzers, and meticulous documentation as integral parts of the game, succeeded in all genres. However, with the power of microcomputers increasing and the demand for graphics (which it refused to include in its games), Infocom saw sales decline and in 1989, it had shrunk to a mere 10 employees, compared to 100 employees at its peak, and games developed after 1989 would have no link with the original team.

Sierra

At the end of the 1970s, Ken Williams sought to set up a company for enterprise software for the market-dominating Apple II computer. One day, he took a teletype terminal to his residence to work on the development of an accounting program. Rummaging through a catalogue, he found a program called Colossal Cave Adventure. He and his wife Roberta both played it all the way through and their encounter with Crowther's game would have a strong influence on video-gaming history.

Having finished *Colossal Cave Adventure*, they began to search for something similar, but found the market underdeveloped. Roberta Williams liked the concept of a textual adventure very much, but she thought that the player would have a more satisfying experience with images and began to think of her own game. She thus conceived Mystery House, the first graphical adventure game, a detective story inspired by Agatha Christie's And Then There Were None.

Ken spent a few nights developing the game on his Apple II, and in the end they made packets with ziploc bags containing the game's 5¼-inch disk and a photocopied paper describing the game. They sold it via a local software shop and to their great surprise, *Mystery House* was an enormous success. Though Ken believed that the gaming market would be less of a growth market than the professional software market, he persevered with games. Thus, in 1980, the Williamses founded *On-Line Systems* which would become *Sierra On-Line* in 1982. The company would be a major actor in the video-gaming of the 1980s.

Sierra soon took things further. Until this point adventure games were in the first person; images presented the décor as seen through the eyes of the player. Williams's company would introduce a new feature in the King's Quest series: a game in the third person. Taking advantage of the techniques developed in action games which had progressed in parallel, Ken introduced an animated character who represented the player in the game and whom the player controlled. With the 3D Animated Adventures, a new standard was born, and nearly all the industry latched onto it. The commands were still entered on the keyboard and analyzed by a syntax interpreter, as with text adventure games.

Sierra would develop new games and push the boundaries of adventure gaming until its purchase by Cendant in 1998. Then in 1998, Cendant sold off their entire interactive software branch for $1 billion to Havas Interactive, a subsidiary of Vivendi Universal.

LucasArts

In 1987, when nobody seemed able to overcome Sierra's power, a programmer named Ron Gilbert working for the company Lucasfilm Games — which has since become LucasArts — created the script-writing system SCUMM which used a point-and-click interface similar to ICOM Simulations' MacVenture games first introduced in 1985. Instead of having to type a command to the syntax analyzer, this system was controlled by means of text icons. To interact with his environment, the player clicked on an order, on an icon representing an object in her inventory, or on a part of the image. This approach was first used by LucasArts for the game Maniac Mansion to great effect.

LucasArts would come to differentiate itself from its main competitor, the giant Sierra, by rethinking certain adventure game concepts to improve playability. Gone was the possibility to die during the course of the game and everything was done to ensure that the player was never completely stuck. Finally, LucasArts abandoned the system of points indicating the player's progress in the adventure. These innovations were immediately taken into account by the competition, especially Sierra.

Gilbert's attempts, Maniac Mansion and Zak McKracken and the Alien Mindbenders, however, remained in 16 colors, and the point-and-click engine wasn't completely integrated since the player would still have to construct sentences using clickable keywords combined with objects in the game. It was The Secret Of Monkey Island that was finally a complete work, with 256 colors, a complete point-and-click engine, a dialogue system with optional responses, puzzles solved with items, original graphics, atmosphere music, and a characteristic sense of humour. Above all, the script was written as for a film (which could be done in-house) and the dialogue and inventory served the needs of the script. The 1993 release of Day of the Tentacle, a remarkable success, began a line of cartoon-style games.

Steven Spielberg collaborated with LucasArts in the creation of The Dig — a science-fiction adventure game that the director had envisioned filming. It met with limited commercial success coming at a time when the gaming public was enticed by high-speed action games.

Taking advantage of advances in action games and integrating an engine similar to those of first-person shooters, the company took a new turn in 1998 with the game Grim Fandango, where it abandoned the cartoon style and its SCUMM scripting environment for a new 3D game system named GrimE.

Myst

In 1991 when the world of adventure games seemed forever dominated by LucasArts, a small team of nine from the company Cyan, Inc., headed by the brothers Rand and Robyn Miller and run out of a garage in Spokane, Washington, began to push the limits of Apple's HyperCard software. By utilizing several Macintosh Quadra computers to generate the graphic images, they invented a new type of adventure game, transforming the genre. Their game Myst was a first-person game with few animations, but the images completely left behind the prevailing cartoon style in favour of ultra-realism. The game was intriguing and captivating, and allowed a level of immersion never previously attained.

The adventure began on an island; the player knew nothing. There was no inventory any more; the player could only carry one object at a time. The game's puzzles were rather classical in their conception. However, thanks to its detailed graphics where everything could be important, the game captivated the player.

Part of its success also seemed linked to the fact that, for the first time, a video game didn't appear to be aimed at an adolescent male audience, but a mainstream adult audience. Released in 1993, *Myst* for many years was the most profitable computer game ever; it sold over nine million copies on all platforms. It wasn't dethroned until the release of *The Sims* in 2000, currently the most successful computer game ever.

Myst gave way to several sequels, Riven, Myst III: Exile, Myst IV: Revelation, as well as Myst V: End of Ages. There is also a massively multiplayer online role-playing game (MMORPG), Uru: Ages Beyond Myst, which isn't actually part of the Myst series. Three derived novels found their origin in its world: Myst: The Book of Atrus, Myst: The Book of Ti'ana and Myst: The Book of D'ni. The game was also parodied by Parroty Interactive's Pyst.

Types of adventure games

There are many types of adventure games, depending on the criteria. Adventure games vary in their subject, interface, setting or plot. A definite categorization can't be done since some of them may belong to 2 or more of the below mentioned 'types'.

Puzzle adventure

Adventure games that do not rely on obtaining items, their use, and character interaction belong to this genre. It emphasizes exploration, reading logs, and deciphering the proper use of complex mechanisms, often resembling Rube Goldberg machines.

These mechanisms are often deliberately labeled with confusing symbols for two reasons: as a form of "copy protection" in that the translation is in the booklet that came with the game, and hence copyrighted just like any book, such as in the Space Quest series; or to make the machines more difficult to figure out. Rhem, for example, has a machine labelled with three subtly different swirling patterns; Schizm has the numerals of its machine deliberately convoluted.

The plot of these games is usually obscure, and relies on the player's interpretation of the setting and the scenery, and information from the logs in order for him to understand the background scenario. Almost all of these games are played from a first person perspective with the player "moving" between still pre-rendered 3D images, sometimes combined with short animations or video. Typical examples include Schizm, Mystery of Sphinx and Myst, which pioneered this game style.

Action-adventure

A popular and commercially successful genre of adventure gaming, action-adventure games typically emphasize combat or other reflex-based forms of gameplay as well as puzzle-solving and exploration. The most prominent example of action-adventure is the Prince of Persia series. The popular Resident Evil series and other similar survival horror games can also be considered action-adventure games. Action-adventure games are common on video game consoles, and have spawned subgenres like "survival horror" and "stealth action games".

Text based

The first adventure games to appear were text adventures (later called interactive fiction), which typically use a verb-noun parser to interact with the user. These evolved from early mainframe titles like Hunt the Wumpus (Gregory Yob) and Adventure (Crowther and Woods) into commercial games which were playable on personal computers, such as Infocom's widely popular Zork series. In recent years, a vibrant and creative community of interactive fiction authors has thrived on the internet. Some companies that were important in bringing out text adventure games were Adventure International, Infocom, Level 9, Magnetic Scrolls and Melbourne House.

Graphical adventure

Graphical adventure games were introduced by a new company called On-Line Systems, which later changed its name to Sierra On-Line. After the rudimentary Mystery House (1980) they established themselves with the full adventure King's Quest (1984), appearing on various systems, and went on to further success with a variety of strong titles. 1985 saw the release of a new kind of interactive adventure with Deja Vu from ICOM Simulations that replaced the text-based parser with a point-and-click interface. In 1987 the well-known second follow-up Shadowgate was released, and LucasArts also entered the field with Maniac Mansion – a game of this new kind that gained a strong following. The classic example of LucasArts work is the Monkey Island series.

RPG-like

Some adventure games rely equally on the common adventure elements, but also on the 'character building' of RPGs. The main character(s) usually has a certain "Hit point" meter and a chart of skills. Some puzzles and feats need a minimum amount of skills in order to be solved (like Climbing above 5 to climb a tree and obtain a lost ring) so the player may have to choose one character over another to solve it, or spend time building the skills of the first character. As in RPGs, the games involve battles, the result of which depends on his character's skills and health (and on the player's reflexes in the case of real-time combat). However, these kinds of games don't belong to the 'Action adventure' above. Typical examples include Quest for Glory, Fallout and Final Battle.

Other

A few adventure games have defined themselves as "original" because they distanced themselves from the main adventure genre and put focus on other elements. They are considered unique because they didn't develop into genres.

- *King's Quest VIII: The Mask of Eternity* (Sierra): Although it could be labelled as an action-adventure, *KQ8* was hard to define because the genre was not popular when it was released. Rather than relying solely on action, it combined many other elements including first-person and over-the-shoulder third-person views (the latter similar to that used in *Tomb Raider*), riddles, dialogue, inventory and RPG elements such as an extensive array of weapons and collecting experience.
- *The Colonel's Bequest* (Sierra): *Bequest* contained riddles and interaction with items and objects like an "ordinary" adventure, but the game focused primarily on communication with other characters and obtaining as much information as possible. The game advanced when the player was present at certain times and places that might reveal information on the plot and backstory. The full score would be attained not for only solving riddles, but for perceiving "suspicious" elements like the relationship between the characters, objects that changed position or traces of information about the killer's identity.
- *LOOM* (LucasArts): This game was widely hailed as original and innovative, not only because of the plot, but for the entire concept. Unlike other adventure games, this one did not have an inventory and puzzles that relied on combining objects. Aside from basic movement and object-examining actions, the only interactions the player had with the game world was in casting spells, which was performed by playing musical notes in certain sequences.

Modern adventure games

For much of the 1980s, adventure games were one of the most popular types of computer games produced. But in the mid-1990s their market share drastically declined, as action games took a greater share of the market, particularly first person shooters such as Doom and Half-Life that feature strong, story-structured solo games. This slump in popularity led many publishers and developers to see adventure games as financially unfeasible in comparison. Text adventures met the same fate much earlier, but their simplicity has allowed them to thrive as non-commercially developed interactive fiction.

Few recent commercial adventure games have been hits. It has been suggested that this is because the "average" gamer today was weaned on console video games and first person shooters rather than the "traditional" computer games cherished by the original crop of adventure gaming enthusiasts. Another explanation offered states that MMORPGs, which offer a persistent multiplayer world, have at least partially supplanted the genre.

Adventure games have ceased to be the flagship titles they once were, and high profile publishers like Sierra Entertainment and LucasArts have either disappeared or shifted towards publishing titles developed by other companies. However, adventure games continue to be made in the 2000s. The games Syberia and Syberia II by Microids garnered high critical acclaim and were published for the Xbox gaming console as well as for the PC. The *Myst* series came to a close in September 2005 with the release of Myst V: End of Ages by its original developer, Cyan Worlds. Adventure games based on the Nancy Drew books are published by Her Interactive and comprise a series of over twelve titles published since 2000. The Nintendo DS and its unique features have sparked a renewed interest in pure adventure game content, with the release of Trace Memory and Phoenix Wright: Ace Attorney in 2005. IGN has noted that the Nintendo Revolution controller would be well-suited for the genre, and could see some ground-breaking releases in that vein.

Yet the genre is still easily found at retail and as a result many fans have taken on the challenge of developing their own adventure games. These "amateur adventure games" are in some cases remakes of old classics or sequels to established titles. Such games are either programmed from scratch or composed by using authoring tools. Examples for such graphical development environments for adventure games are Adventure Game Studio and Visionaire

Although traditional adventure games are rare today, action-adventure games that combine elements of adventure games with action games are quite common. There are also similarities between adventure and role-playing games, particularly those in a more modern, story- and character-based mold. Computer role-playing games in this vein have been published more frequently since the success of Baldur's Gate in 1998, and console role-playing games have generally been quite focused on plot and story, thanks in part to the success of the Final Fantasy series.

Many famous adventure games cannot be run on modern computers. Early adventure games were developed for the C64 or the Amiga, computers which are not in much use today. There are now emulators available for personal computers that allow these old games to be played. One Open Source project called ScummVM provides a free engine for the LucasArts adventure games. Text adventure games have survived much more readily. There are only a small number of widespread standard formats, and nearly all the classics can be played on modern computers. Even some more modern text adventure games can be played on very old computer systems. Text adventure games are also suitable for PDAs, because they have very small computer system requirements.

Common features

Adventure games, like RPGs, often feature "fetch quests": in order to advance, the player has to help a character in order to gain information or an important item as a reward. In fantasy-themed games, this character is often a healer or magician, and the secondary quest is to find artifacts or items, not uncommonly ingredients for a potion.

Adventure games have been criticized because some games adopt the attitude that 'the ends justify the means'. In such cases, the player must obtain an item from someone reluctant to cooperate, and the only way to progress is to distract him or her in order to steal the item. In contrast, however, many adventure games have quests or missions that urge the player help others; for instance, helping tormented spirits that seek deliverance, freeing a trapped animal, or otherwise performing benevolent, selfless acts. Often these characters will reward the player later in the game, often at a critical juncture. (Of course, this can be argued to deflate the "selflessness" of the good deeds.)

Early adventure games sometimes trapped the players in unwinnable, dead end situations. For example, if the player overlooked a key (or an important item early in the game), the game cannot be completed if he later finds himself trapped in a cell. Such games frequently did not end at this point since the player was not killed; with no indication that a vital object had been missed, the player was often reduced to trying increasingly outlandish actions until finally restoring to an earlier point or quitting the game altogether. Naturally, players rarely found this type of gameplay entertaining. Some companies, including LucasArts, deliberately and explicitly avoided dead-end situations in many of their games. Although some die-hard adventure purists scorned such practices as "dumbing down games for the masses", more games adopted the approach over time; even Sierra, who was infamous for a time for ruthlessly "punishing the player", eventually embraced the concept.

Some items are featured very often in various adventure games, and have many uses. Two examples are a rope and a crowbar. In some games, certain items are used as part of running gags; for example being used in many absurd situations far from their original intended purpose, or items which are seemingly useless for most of the game, such as the rubber chicken with a pulley in the middle in *The Secret of Monkey Island*.

Notable adventure games

Colossal Cave Adventure
The Hitchhiker's Guide to the Galaxy
Maniac Mansion
Full Throttle
Grim Fandango
Day of the Tentacle
Zak McKracken and the Alien Mindbenders
Hugo's House of Horrors
Shadowgate
The Dig

Series

Zork
King's Quest
Leisure Suit Larry
Space Quest
Police Quest
Indiana Jones
Monkey Island
Quest for Glory
Alone in the Dark
Gabriel Knight
Myst

Discworld
Tex Murphy
Broken Sword
Simon the Sorcerer

References

Originally translated from the article on the French Wikipedia, which cites the following sources:

- ANFOSSI, Gérald, *La programmation des jeux d'aventure*, Editions du PSI, Paris, 1985
- MITCHELL, David, *An Adventure in Programming Techniques*, Addison-Wesley Publishing Co., London, 1986

See also

- Computer and video games
- MUD
- Roguelike

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Action-adventure Games

Action-adventure games are video games that combine elements of the adventure game genre with various action elements. Nintendo is generally cited as originating the genre with *The Legend of Zelda* (1986); as a result, action-adventure games are simply called "adventure games" by many console gamers.

In action-adventure games, while reflex-based actions are required (often revolving around combat or the avoidance thereof), the gameplay still follows a number of adventure game genre tropes (gathering items, exploration of and interaction with one's environment, and puzzle-solving). This type of game is often quite similar to computer role-playing games; many consider the *Legend of Zelda* series to be hybridized role-playing games ("adventure-RPGs" or "action-RPGs"). The term "action adventure" itself has become more generalised since its introduction, and can now be used to refer to virtually any game which combines elements of reflex-based play with some element of problem-solving. Subsequently popular action-adventure franchises include Tomb Raider, Metal Gear, Metroid, and more recent entries in the Castlevania series. Additionally, the survival horror genre, which includes popular series such as Resident Evil and Silent Hill, emerged as a sub-genre out of action-adventure games.

Action-Adventures may be designed with a variety of viewpoints including bird's eye, sidescrolling, first-person, 3rd-person, over the shoulder, or even 3/4 view.

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Amateur Adventure Games

An **amateur adventure game** is a fangame or a freeware computer game belonging to the adventure genre. The amateur adventure game scene emerged in the mid to late 1990s as commercial adventure games became more rare, thus encouraging gamers to make their own games. (The situation is comparable to that of Interactive fiction.) The popularity of the Internet was increasing at the time, making easy distribution of games as well as adventure game creation systems - such as the popular Adventure Game Studio (**AGS**) - possible. Nowadays the amateur scene is mainly centered around the AGS community and a few adventure-related websites.

History

In the early days of the scene, most aspiring designers were divided into two groups - those using AGS and those planning on using SCRAMM, a system apparently heavily inspired by SCUMM. SCRAMM and its rival, Glumol, were never finished, and people soon either abandoned their projects altogether or began looking for engines that weren't vaporware. Initially engines called AGS, AGAST and SLUDGE gathered the most prominent following, AGS being clearly in the lead when it came to the size of the community and the amount of games being released per year.

As the engines have developed over time and their stability has increased, they have a long time ago surpassed the functionality and ease of use of the development systems of most commercial studios, including LucasArts' SCUMM and Sierra's SCI. For example, a relatively new engine, called Wintermute, was the first to use DirectX's 3D acceleration capabilities to enable smoother and faster rendering of sprites, especially making special effects such as transparency faster to render.

List of popular engines

Freeware

- AGAST
- AGS
- Wintermute

Shareware

- SLUDGE

Commercial

- Visionaire

See also

- Adventure games
- Interactive fiction
-

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Fughting Games

Fighting games or **fighters** are video games in which players fight each other or computer-controlled enemies, usually employing some variation of the martial arts. Along with fixed shoot 'em ups, they are traditionally at home in the arcades, and are considered separate from sports games such as wrestling, boxing and "ultimate fighting" games.

The term **beat 'em up** is commonly used to specifically describe games in the **scrolling fighting game** sub-genre. However, among some players (particularly those from the UK), the phrase can refer to **versus fighting games**.

Scrolling fighting game

In this type of fighting game, typically known as a **brawler** or **beat 'em up**, one or more players (most often two, but sometimes as many as six) each choose a unique character, and team up to punch, kick, throw and slash their way through a horde of computer-controlled enemies. The fighting occurs in a series of side-scrolling stages, some with a powerful boss enemy at the end. In the most common variation, players can move away and toward the screen as well as left and right, although earlier scrolling fighting games such as Kung Fu were more likely to allow only single-dimensional or linear movement, plus jumping. This style is sometimes referred to as a **walk and punch** game.

There are two main variations on the style of gameplay: a fisticuffs and martial arts emphasized, or weapons emphasized. Fisticuff emphasized games focus on primarily fighting opponents with hand to hand combat. On occasion these games will have weapons which the player can find lying around in the game world, or can take from opponents holding them(e.g. knocking down an opponent holding a bat in Double Dragon and Final Fight makes the opponent drop the bat). Since the primary focus of gameplay is hand-to-hand combat, it is common in this type of game for weapons to disappear relatively shortly after a player acquires them. This typically happens whenever a player is knocked down, uses the weapon more than specified number of times, or heads to another stage. Example of games with martial arts emphasized include the Streets of Rage series, River City Ransom, Final Fight, and the Double Dragon series.

Weapons-emphasized games have a plethora of martial-arts weapons (such as nunchaku and shuriken) as well as other types of weapons that are already at the player's disposal or can be found as the player progresses through the game. While some of these games do have hand-to-hand combat moves, like being to throw a close-standing opponent, the focus is on mêlée or ranged weapon combat. Because the player is armed, these games typically have more opponents attacking a player at one time than games where the emphasis is on martial arts. Examples of games with weapons emphasized include the Teenage Mutant Ninja Turtles series, Alien vs. Predator, Ninja Gaiden series, Devil May Cry series, Captain Commando, Dynamite Cop, Golden Axe series and Magic Sword.

Golden age of scrolling fighting games

Starting in the mid 1980s, particularly with Double Dragon, the ability to move sideways via perspective was added. Two major milestones, which utilize this perspective approach are Double Dragon and Final Fight; both of these games spawned franchises that still survive today, while some of the most popular scrolling fighting games from the late 1980s to the mid 1990s utilized the same gameplay approach. At its height, the side scroller was one of the most popular kinds of arcade games, but they have since fallen out of fashion. Capcom was known for producing several popular scrolling fighting games, ranging from original titles such as Captain Commando and the Final Fight series to licenced works such as Dungeons & Dragons: Shadow over Mystara, Knights of the Round and Alien vs. Predator Capcom's most recent scrolling fighting game is Beat Down: Fists of Vengeance, which incorporates RPG-like gameplay.

Video game consoles also had some very popular scrolling fighting games, particularly River City Ransom for the NES, and the Streets of Rage series for the Sega Genesis.

Modern scrolling fighting games

While a few 3D scrolling fighting games exist (notably Sega's Die Hard Arcade and Spikeout, Squaresoft's The Bouncer and Konami's remake of 1989's Teenage Mutant Ninja Turtles), they are much more a niche genre than the 2D iterations were. They are mostly attempts to captialize on popular franchises on previous video game consoles. The major innovation that in the modern games is the introduction of combo, and versus fighting game style moves to execute various attacks. In a combo system, the player can execute a certain series of moves to prevent the opponent from being able to counter attack and possibly receive bonuses for the number of consecutive hits. These gameplay extensions in part due to the expansion of the amount of buttons on modern controller interfaces, but also to add depth in what has been historically very simplistic gameplay (with some exceptions, such as the fighting system in the Kunio Kun games.

However, modern scrolling fighting games have increasingly taken traditional gameplay elements created new hybrid gameplay with other genres. These games are charterized by an added depth accomplished by presenting variety of missions, much more gunplay (and fighting abilities that involve guns such as disarming moves), and slow-down/"berserk mode" abilities. Essentially, the 3d scrolling fighting game has been merged with the third-person shooter genre. Games that take this unified approach include BloodRayne, The Warriors, and Dead to Rights.

Versus fighting game

In **versus**, or **competitive** type of fighting games, two players (sometimes more) each choose a character, and then fight against each other over several rounds. The winner of a round either knocks out his opponent (usually by depleting an energy indication bar to zero), comes closest to knocking him out, or (in some 3D titles) sends him out of the ring.

In contrast to side-scrolling fighting games, most versus fighting games are competitive rather than co-operative. Some offer players the chance to battle as teams (two-on-two or three-on-three being most common) instead of one-on-one. The characters can be alternated in either a tag team (characters can be switched out in the middle of the round) or elimination mode (team whose members lose the individual rounds loses the match). In a few of these team versus games, players can opt to play on the same team, usually in a tag team fashion. Because of their competitive nature, versus fighting games are conducive to tournament play.

One of the main attractions of this game type is the large number of characters each game has, all of whom usually have a distinct appearance and fighting style. For example, the characters of the Street Fighter series come from around the world; characters of The King of Fighters series have very well defined personalities and backstories, as well as distinct and differing abilities; those of Eternal Champions were taken from distinct historical periods; the cast of the Guilty Gear series simply seem to differ wildly from one another; and characters from the Mortal Kombat series range from criminals to Shaolin monks to gods. Depending on their discipline, characters may be unarmed or armed with mêlée weapons (swords, sticks, nunchaku, etc.).

Due to the fall in popularity of scrolling fighting games, the terms **fighting game** and **fighter** are generally taken to refer to versus fighting games.

The 2D/3D difference

At present, versus fighting games can either be two-dimensional (2D) or three-dimensional (3D).

Characters in 2D fighting games (*Street Fighter*, *The King of Fighters*, early *Mortal Kombat*, *Guilty Gear*, Killer Instinct) are hand-drawn/ digitized and animated sprites, and can move left and right and duck and jump, but in many games they can't sidestep or move 'closer to the screen'. Games where the player can slightly take adventage of depth of the fighting arena include many of those in the Fatal Fury series. The player's viewpoint scrolls in various directions but stays at a fixed angle. The 2D fighter's characteristic gameplay mechanics are exaggerated jumps, projectile attacks, and an "air/ground/low" attack/ block system. Since there is a lack of depth, two-dimensional titles usually involve extensive moves that take advantage of the height of the screen, as jump attacks are essential moves. Two dimensional games stem from long-established fighting systems that have been greatly refined over the years, resulting in most modern 2D fighters having more possible standard techniques than 3D fighters. Guilty Gear X2, for example, has instant-kills, opponent-launching moves, and a complex system of counter attacks and escapes.

Two-dimensional fighters also are have a greater number of *mashup fighters*: games where several characters from various other games are merged into one title. These games typically have a very large amount of playable characters, sometimes numbering over 64. Mashup fighters tend to be tag matches; the player chooses several characters, can switch between them during rounds, and utilize team-up attacks. Additionally, these games tend to have several different fighting systems to choose from, incorporating the fighting system from each originating game. Mashup fighters include Capcom's Verus series (Capcom vs. SNK et al), SNK's King of Fighters series, Nintendo's Super Smash Brothers series, and Sega's Fighters Megamix.

In 3D titles (Virtua Fighter, Soul Calibur, Tekken, Dead or Alive, later Mortal Kombat games), the characters and stages are 3D polygon-based models. The camera's viewpoint is not fixed and can rotate and move in any direction, and the characters can sidestep as well as duck and jump. In contrast with the gameplay of 2D titles, jumping and projectile attacks are typically minor elements. Often blocking and attacking are more complex, featuring high, mid, and low attacks and blocks. Thus, the gameplay in 3D fighters is generally two-dimensional as well, although in the XZ dimensions instead of XY; however, there are exceptions such as Power Stone and Tobal No. 1. 3D fighting games usually have slower attack speeds than their 2D counterparts, because instead of a punch being represented by a two-frame animation, a 3D game usually has a longer sequence (often created using motion capture) which is allowed to play fully, causing the overall attack to be slower but more realistic.

Three-dimensional games usually have much larger fighting arenas, which can have multiple sub-sections/paths (most notably in the Dead or Alive series There is a tendency for a number of environmental hazards that can be utilized against the opponent, such as knocking a player off a cliff or into an electrified fence. Many three-dimensional fighters have two win conditions; standard health depletion or ring-out. A ring-out is accompilshed by forcing the player out of the fighting arena either with an attack or just pressure. Thus, rounds in three-dimensional fighting games can end much sooner than in their 2D counterparts. Some 3D fighting games have gameplay that closely mimics 2D fighters, incorporating three-dimensional depth as a method of escaping attacks rather than an essential part of the fighting system. Notable examples of this include Capcom's Project Justice and Powersword series and Midway's Biofreaks.

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Tactical Shooter

Tactical shooters include games of the first-person shooter (FPS) and third-person shooter genre of video games that generally simulate non-fictional, squad-based or man-to-man combat. This may come in the form of police fighting terrorists or other criminals, military combat in the recent past or hypothetical near future, and so on. The emphasis is on realistic modeling of weapon effects, terrain, and character capabilities, which lead to the possibility of other tactics being used in play than the more conventional FPS "shoot everything that moves" game style. Thus, Wolfenstein 3D is not considered a tactical shooter, although it involves military combat, because it doesn't involve teams and grants the player's protagonist unlimited physical stamina and a fantastical resistance to bullets.

Popular and influential tactical shooters include the Battlefield series, Brothers in Arms series, Delta Force series, Counter-Strike, SWAT 3, SWAT 4, Rainbow Six, Ghost Recon, Operation Flashpoint, and America's Army.

In multiplayer games, the term can have a different, somewhat looser meaning. A multiplayer tactical shooter focuses on team cooperation to achieve objectives, rather than simply eliminating the enemy (as in traditional deathmatch games). The tactical emphasis is thus on joint goals and assisting team members, rather than on overcoming realistic individual limitations.

Tactical shooters involving military combat are sometimes known as soldier sims.

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First-person Shooter

A **first-person shooter** (**FPS**) is a combat computer or video game genre, which is characterized by the player’s on-screen view of the game simulating that of the character.

Games like Battlezone, or many flight simulators might at first seem to be included in this broad definition, however, in the early 1990s, the term came to define a more specific type of game with a first-person view, almost always centered around the act of aiming and shooting with multiple styles of weapons and limited ammunition. On-rails shooters are often viewed from a first-person perspective but are a genre of their own.

The modern FPS genre emerged during the early 1990s, at the point when home computers became sufficiently powerful to draw basic 3D graphics in realtime. The breakthrough games were id Software's Wolfenstein 3D and Doom. The latter, in particular, defined the genre so emphatically that FPS games were commonly referred to as "Doom clones" for a significant period after its release.

First-person shooters have been subject to substantial controversy due to the levels of violence included in some games, and the visual realism that can be more inherent in the shooting of things in a first-person perspective.Overview

The first-person shooter can be considered a sub-genre of shooter games, though almost all other two dimensional shooter games, especially shoot'em ups, are more concerned with the gameplay mechanic of dodging than of precise aiming. The term FPS has generally come to refer to games where the player has full control over a character and can interact directly with the environment.

Many **third-person shooters** (where the player sees the game world from a viewpoint above and behind the main character) are commonly treated as first-person shooters, due to similarities in gameplay. In some cases (for example, Unreal Tournament 2004, Command & Conquer: Renegade, Oddworld: Stranger's Wrath or Duke Nukem 3D) it is possible to toggle the game between both viewpoints.

Sub-genres

The realism in FPS games can vary from arcade shooters, which are fast paced and have unrealistic elements (such as the player being able to shrug off bullets or falling large distances) to levels approaching reality, where players are routinely killed by a single shot. In practice, most games fall somewhere between the two.

Distinct sub-genres exist, which use a similar viewpoint and mechanics, but emphasise different aspects of gameplay. These are now generally regarded as being distinct from FPSs by computer games magazines, and include:

- The stealth-based game or "first-person sneaker" centers on avoiding detection by opponents (for example, *Thief*)
- The tactical shooter emphasises tactics (Rainbow Six, Ghost Recon, America's Army, and other games based on novels by Tom Clancy, and games such as Operation Flashpoint , Killzone or Tactical Ops)
- The run and gun shooter is a fast paced, all-about-action type of first person shooter, often containing a large number of enemies. Many of the older shooters like Doom, Quake, and some more recent titles like Serious Sam and Halo (video game series) are in this genre.
- The action/adventure shooter has larger environments and a greater emphasis on puzzle-solving and exploration (System Shock 2, Metroid Prime, and Half-Life being examples.)
- The multiplayer FPS, designed primarily for online play, where the single-player component (if any) consists entirely of simulated online play against bots, e.g. Quake 3, *Counter-Strike*, Timesplitters 2, Unreal Tournament, and America's Army.
- The MMOFPS combines first-person shooter gameplay with a large number of simultaneous players over the Internet. World

War II Online and PlanetSide are the pioneers of this new subgenre

Some FPS games strive to increase the realism of graphics and game environments, while retaining unrealistic gameplay. As a result, in many games the player has exaggerated physical capabilities and resiliency that allow him to make manoeuvres such as "grenade jumping", which is an action that allows the player to gain an extension to normal jumps by blast effects. The extended jump is possible with other game weapons and can thus have different names: for instance, the Quake series allows "rocket jumping". Other maneuvers common in FPS games are straferunning and circlestrafing

For many, the appeal of the FPS lies in immersive frantic blasting with a touch of verisimilitude, humour, puzzle-solving, and claustrophobia. For others, the single player mode in story-oriented games can have compelling narratives which allow for added element of drama in the games.

Game conventions

- One of the genre conventions is that crates, barrels, and similar objects are used often to "decorate" levels, in an attempt to give the player a more detailed and interactive environment. Crates are many times used to provide a jumping boost, whilst many barrels tend to be explosive (a legacy from Doom)
- The player normally begins with a single weak weapon, ranged or not, most likely the weakest. As he progressively obtains stronger weapons, so do the enemies become more difficult, in an attempt to balance the difficulty level of the game.
- Another traditional convention lies with the necessity of pushing buttons and levers so as to open doors and allow for the progression of the player. In earlier games, the button and the door it opens would frequently be on opposite sides of the level for no logical reason. This convention has diminished somewhat in favor of scripted events, although it is still quite visible in some games

Platforms and hardware development

The primary platform for modern FPSs has traditionally been the PC, though there have been notable games on other platforms, and the number of releases on consoles are increasing steadily

FPS are among the most demanding programs for computing resources, persuading many users to upgrade computers that are still suitable for more mundane tasks, such as online browsing and office work. According to IDC analyst Roger Kay, high-end games serve as a catalyst for the mainstream personal computer market. FPS games can stretch the capabilities of CPUs and the graphics cards ([1]). The rise of the genre has been a significant driver in the market for consumer graphics cards, particularly with regard to support for hardware acceleration of 3D graphics. Recently, consumer HMDs have been introduced which should further drive developments in virtual reality technology and better game play by providing a more immersive experience

Online play and mods

Most FPSs feature competitive and/or co-operative online multiplayer modes. Players of these games often form into teams, or "clans" and participate in organised tournaments and championships. Some of these contests have sufficient prize funds to allow players to turn partially or even fully professional

Among modern video game styles, FPSs were the first genre to gain a widespread online gaming community. This was due to a deliberate policy of innovation by games developers (notably by id Software), aided by the combination of two technical factors: The relatively small number of moving objects in the game world (particularly in early games) reduces the amount of information to be transmitted across the network, and the relatively large distances between player avatars (compared to, say, fighting games) mitigates the effect of the inevitable network lag. Despite these effects, these games remain highly sensitive to network speed, and complaints about lag are still common

Many FPS games are designed with a core game engine, separate from the graphics, game rules, and levels. This enables developers to reuse or license the core software for other games. This "plug-in" design, combined with the general-purpose nature of the PC (compared to consoles) allows amateur programmers to add new elements to games, such as new rules, characters or weapons without having access to the underlying technology. This process is known as "modding", from *mod*ification

Indeed, it is a common characteristic of FPSs that players and enthusiasts are able to create their own levels (*see* level design) or even change overall graphical appearance and gameplay for distribution to other fans. Normally, this distribution must be done for free in order to abide by the developer's license. This has contributed to the longevity both of the genre and of individual games. Some games even serve as a basis for total conversions, where all of the game content is replaced, leaving only the basic game engine intact. Many games now include the software the designers used to make levels, such as UnrealEd for the Unreal series. The amount of custom levels made for a game is heavily affected by how popular the game is and the size of the community available to play the map. For example, Wolfenstein: Enemy Territory increases the potential audience for a user-created level by allowing a custom level to be downloaded when a player connects to a server, as opposed to requiring the levels to be downloaded and installed in advance

The communities of amateur programmers around FPS games can often become recruiting grounds for development companies; Valve Software have taken this as far as recruiting the core development teams of mods and releasing their product commercially

History

The first-person shooter, as the phrase is currently understood, emerged in the early 1990s. However, the modern genre is a logical extension of earlier games, particularly those involving 3D graphics. While these early games are not First-Person Shooters in the modern sense, many of them come very close in gameplay terms, and many others contained ideas which later influenced the modern genre.

Beginnings

It is not clear exactly when the first FPS was created. There are two claimants, Spasim and Maze War. The uncertainty about which was first stems from the lack of any accurate dates for the development of Maze War — even its developer cannot remember exactly. In contrast, the development of Spasim is much better documented, and the dates more certain.

The initial development of Maze War probably occurred in the summer of 1973. A single player made their way through a simple maze of corridors rendered using fixed perspective. Multiplayer capabilities, with players attempting to shoot each other, were probably added later in 1973 (two machines linked via a serial connection) and in the summer of 1974 (fully networked).

Spasim was originally developed in the spring of 1974. Players moved through a wire-frame 3D universe, with gameplay resembling the 2D game Empire. Graphically, Spasim lacked even hidden line removal, but did feature online multiplayer over the world-wide university-based PLATO network.

1979-1990: Arcades and home computers

The next significant games arrived in the video arcade boom of the late 1970s. The 1979 game Tail Gunner was the first commercial game to provide a first-person perspective. Players could not move through the simulated world, but fought off opponents from a fixed point in space.

1980's Battlezone, a tank combat simulator, allowed players to move around the game world in their battle with computer-controlled enemies, and thus became the earliest widely-available first-person shooter in arcades. It was a resounding commercial success.

In the early 1980s, the home computer market grew rapidly. While these machines were relatively low-powered, limited first-person-perspective games appeared early on. Star Raiders (1979) gave the player the perspective of a spaceship pilot flying through a streaming 3D starfield; motion was unrestricted, but the environment consisted only of stars and individual moving objects, with no 3D scene rendering at each individual frame. 3D Monster Maze (1981) for the Sinclair ZX81 was the first truly 3D first-person adventure game on a home computer, although not a shooter. Phantom Slayer (1982) restricted the player to 90-degree turns, allowing "3D" corridors to be drawn with simple fixed-perspective techniques. In these games, computer-controlled opponents were drawn using bitmaps.

Numerous other "tricks" were used by programmers to simulate 3D graphics. Examples include two early games from Lucasarts, Rescue on Fractalus (1984) which used fractal techniques to generate an alien landscape for the player to fly over, and The Eidolon (1985) which scaled simple bitmaps to create the illusion of 3D.

Later in the decade, the arrival of a new generation of home computers such as the Atari ST and the Amiga increased the computing power and graphical capabilities available, leading to a new wave of innovation.

The first true 3D flat-polygon (hidden surface) game was the single-player role-playing game The Colony, in 1987. It lacked most modern graphical features such as textures and colors. Other FPS games of the flat-polygon era include Faceball 2000, and MIDI Maze, notable for its networked multiplayer feature (communicating via the computer's MIDI interface, of all things).

1991-1993: Defining the genre

By 1990 the technology to render very simple flat-colored 3D worlds was widespread, and was being used extensively in simulator games such as Abrams M1, LHX: Attack Chopper, and others.

In April 1991, the then-unknown id Software released Hovertank 3D. Various assumptions about the game world simplified the processing sufficiently to allow real-time rendering of a 3D maze. The game environment was a simple flat grid-based map, with enemies rendered as sprites. Later the same year, a modified version of the same game engine, adding texture-mapped walls, was used in Catacomb 3D, which also introduced the concept of showing the player's hand on-screen, strengthening the illusion that the player is literally viewing the world through the character's eyes.

In 1992, id improved the technology by adding support for VGA graphics in Wolfenstein 3D which surprisingly was only created by 13 people in 2 months. With these improvements over its predecessors, Wolf 3D was a hit, and marked the emergence of the modern FPS genre.

A lesser-known predecessor to Wolf 3D is Ultima Underworld (1992), developed by Looking Glass Studios and marketed by Origin Systems. Unlike Wolf, Underworld supported many true 3D features such as non-perpendicular walls, walls of varying heights, and inclined surfaces. A technology demo of this game was, in fact, John Carmack’s inspiration for Wolfenstein 3D’s game engine.

Wolfenstein 3D was soon surpassed by id's next game, the genre-defining Doom (1993). While still using sprites to render in-game opponents, *Doom* added texture-mapping to the floor and ceiling, and removed some of the restrictions of earlier games. Walls could vary in height, with floor and ceiling changing levels to create cavernous spaces and raised platforms. In some areas, *Doom* removed the ceiling altogether to create the outdoor environments that were generally lacking in previous genre games. However, there were still significant limitations on the environment; all surfaces were strictly horizontal or vertical, and a map could not "stack" floors one above another.

While the graphical enhancements were notable, *Doom*'s greatest innovation was the introduction of network multiplayer capabilities. While similar multiplayer modes had existed in previous mainframe- or arcade-based games, *Doom* was the first mass-market game to gain a significant following dedicated to multiplayer (usually, but not exclusively, LAN-based) contests, and guaranteed persistence of the FPS in gaming formats; the real thrill of these already-atmospheric games comes from blasting human opponents, be they friends or strangers on the Internet. *Doom* was also one of the earliest FPS games to gain an active community of fans producing add-on maps.

1994-2000: After *Doom*

Doom dominated the genre for years after its release. Every new game in the genre was held up against id's masterpiece, and usually suffered by comparison. However, some developers wisely chose not to attack *Doom* head-on, but instead to concentrate on its weaker aspects, or expand the new genre in alternative directions.

Marathon (1994), together with its sequels Marathon 2: Durandal (1995) and Marathon: Infinity (1996), included a strong plot, revealed through a series of computer terminals, a radical change from the simplistic "blast anything that moves" style of most earlier FPSs. Unfortunately, these games did not reach a wide audience, being released on the Apple Macintosh platform, and only *Durandal* being released on the PC.

System Shock (1994) and System Shock 2 (1999) combined an FPS-style viewpoint and controls with role-playing game and horror gameplay elements. Both games received huge praise from critics and huge cult followings, but limited mainstream success.

In 1995 the LucasArts Star Wars: Dark Forces, introduced a linear storyline with levels presented as 'missions' with certain objectives to be done, and cutscenes that advanced the plot. It was also the first Doom clone to be set in a definite background (Imperial bases, Star Destroyers, ships, planets etc) instead of simplistic surreal mazes and 'find the exit' scenarios.

The 1995 game Descent used a fully 3D polygonal graphics engine to render opponents (previous games had used sprites). It also escaped the "pure vertical walls" graphical restrictions of earlier games in the genre, and allowed the player six degrees of freedom of movement (up/down, left/right, forward/backward, pitch, roll and yaw).

In 1996 id Software released their eagerly-anticipated Quake which significantly enhanced the network gaming concept introduced by Doom. Like Descent, it used a 3D polygonal graphics engine to render enemies, but, again, Quake's greatest influence was felt in network-based multiplayer gaming. Quake was the first FPS game to really break out of the LAN and gain a widespread fanbase dedicated to multiplayer Internet gaming.

Quake also innovated by actively encouraging user-made modifications. These "mods" contributed to its longevity and popularity with players; in some cases (such as Team Fortress) they even developed a semi-independent existence.

Duke Nukem 3D, also released in 1996, was the first game using what proved to be the most popular engine of the decade (12 released titles), Ken Silverman's Build engine. Build was outwardly similar to Doom's engine, but the internals (and many engine features) were radically new and different. The game itself was a new take on the shooter, with main character Duke characterizing himself by way of witty, egotistical one-liners and interaction with all sorts of goofy objects, from blowing up urinals to tossing cash at strippers. Duke, and Build, are also notable for having one of the simplest map editors of any 3D game ever made.

In 1997, GoldenEye 007 was released for the Nintendo 64 and was praised for its realistic setting (incorporating elaborate bullet-hit detection, impressive artificial intelligence and animation, and well-designed environments based on the GoldenEye movie's sets) and a varied split-screen multiplayer deathmatch mode. Console first-person shooters have for many years been criticised for having control schemes less precise than the keyboard and mouse of PC titles, yet *GoldenEye* overcame such complaints to be considered the first great FPS for a console.

Also released that year was the first Western-based shooter by LucasArts: Outlaws. The game was mostly played through the Microsoft Internet Gaming Zone. Another popular game on the "Zone" was another LucasArts title, Star Wars Jedi Knight: Dark Forces II a game with a Star Wars theme. Jedi Knight is distinctive from a technological standpoint because it uses a Negative-Space engine instead of the more common brush engine, like Quake-derived games use. Jedi Knight is still active and is still being modded by enthusiasts today at locations like The Massassi Temple. The lasting popularity of both *Jedi Knight* and *GoldenEye* is interesting considering their nature as film licences, relatively few of which are highly-regarded by gamers.

In 1998, the game Half-Life was released, featuring a single-player game with a notable narrative focus directing the action and the goals of the player. The tremendous success of the game encouraged the creation of many more games with a similar focus on story-based action. *Half-Life* also produced many successful mods, such as the hit *Counter-Strike*. Counter-Strike continues, seven years later, to be the most popular multi-player FPS in the world; a feat of no small achievement in a market of ever-changing consumer tastes.

Also in 1998 Thief, the Dark Project was released. It was considered by many critics to be one of the first FPSs to successfully implement stealth elements. Some deemed it a "first-person sneaker". Another game released in the same period that contributed to expanding the genre was Shogo: Mobile Armor Division because of its heavy anime influence and strong emphasis on story and characters, although the game never made great commercial successes and is relatively unknown.

Another game of 1998, Starsiege: Tribes, while not a major commercial success, was also very influential. Supporting large numbers of players, vehicles, wide-open landscapes and innovative movement mechanics provided by the jetpack all players spawned with, Tribes can be considered the ancestor of many modern multiplayer-focused shooters including Battlefield 1942 and contributed greatly to the creation of the massively multiplayer FPS genre (including World War II Online and PlanetSide).

1999 was another important year for FPS, as two competing franchises were pitched head-to-head: Quake III Arena and Unreal Tournament. Both games were widely acclaimed by game-industry critics and laid the basis for their respective franchises to continue onward: the Unreal Tournament series with Unreal Tournament 2003 and later Unreal Tournament 2004, and the Quake series with Quake 4, released October 2005.

The 2000s

In 2000, Deus Ex was released, a single-player FPS that blended elements from RPG and adventure games. It featured many side-quests and multiple ways of completing each mission. This game also had a character building system similar to an RPG where the player gained experience points for completing various objectives, which were then spent on upgrades for your character. Additionally, it incorporated stealth elements that first appeared in *Thief: The Dark Project*.

In 2001, Operation Flashpoint was released, creating a new level of realism in an FPS environment with extensive vehicles and aircraft, seamless indoor / outdoor environments, and view distances an order of magnitude longer than anything else released before it in the genre. Also, Halo: Combat Evolved was released for the Xbox, a first person shooter with third-person vehicle usage. The game was acclaimed for its artificial intelligence used to control the game's enemies, and key features of its gameplay have since become genre standards. For example, the game's limited weapons inventory (two weapons at any given time), and recharging shield on top of a non-recharging health supply have been widely imitated.

In 2002 Battlefield 1942 was released, including easily-operated vehicles, aircraft, and ships. The game featured class based infantry combat system in a World War 2 setting, and proved to be a highly popular multiplayer game (though it could still not match the popularity of Counter-Strike, which as of 2005, continues to dominate the genre as far as popularity). Meanwhile, in the world of consoles, Metroid Prime was released. It was an FPS for the Nintendo GameCube, set in a comparatively large world that focused more on exploration than combat; due to this focus, many critics referred to it as a first-person adventure game. It featured state-of-the-art graphics and a lock-on based targeting system similar to that used in Nintendo's first-party title *The Legend of Zelda: Ocarina of Time*.

In 2004, many sequels to older games were released, along with some newcomers:

- *Painkiller*, *Far Cry*: both titles featured vast and highly detailed environments, indoors and out. Also, they had sophisticated AI and physics systems rounding out the feature set.
- *Doom 3*: Made use of a new graphics engine featuring hitherto unseen real-time lighting and shadows, used exclusively to create an atmosphere of fear and danger for the player. Essentially a "re-telling" of the original Doom story, and in many ways a throwback to some of the techniques used in earlier FPSes, the main selling point for the game was actually its graphics engine. Using cutting-edge technologies, id Software created one of the most powerful graphics engines to date. As with previous Doom and Quake engines, it is being widely licensed to developers.
- *Halo 2*: The sequel to Halo with enhanced graphics and sound, and new game features such as hijacking vehicles, vehicle destruction, dual-wielding weapons and online multiplayer support. Halo 2 also has enhanced LAN capablities over Halo in that players can now hook up to 16 Xboxs and T.V's instead of 4. Halo 2 is also one of the few console games to have a expansion pack released for it.
- *Half-Life 2*: Making extensive use of shaders, AI with squad tactics, Havok middleware physics engine and relatively large maps for its level of graphic detail. The level of detail seen in the game is perhaps best exemplified by the complex character facial models developed especially for the game. The behind-the-scenes character engines can use voice recognition software, and the mouths of the models in the game will move according to what the character is saying and will express emotions when combined with script; this innovation vastly reduced the development time required to animate such complicated motions.
- *Metroid Prime 2: Echoes*: A sequel to the successful Gamecube FPS and another 3D version of the classic Metroid games for the NES and SNES. Nintendo initially claimed it to be not an FPS but an 'FPA' or 'First-Person Adventure,' but this was eventually laid aside in favor of the more traditional 'FPS' term.

There have been many attempts to combine the FPS genre with role-playing (RPG) or real-time strategy (RTS) games. The *Half-Life* mod Natural Selection blended a multiplayer FPS with some RTS elements. Wolfenstein: Enemy Territory blended some RPG elements with an experience and skill-based point system that can work across matches. Battlefield 2 has a stats tracking similar to *Enemy Territory*, and a complicated scoring system.

Controversy

Some groups have blamed first-person shooters — the usual suspect for video game violence — for certain spree killings. For example, there was much controversy in the United States that the Columbine High School massacre was a result of the attackers having played a great deal of the FPS Doom. In fact, one of the attackers created levels for Doom, the most popular being one called "UAC Labs", which can still be found on the Internet to this day as the Harris levels. Years later, there was much speculation in the UK media that the Beltway sniper attacks were inspired by first-person shooters and games such as Grand Theft Auto that have first-person shooter elements.

Some claim that the system of rewards and punishment in violent video games like *Doom* systematically teaches participants to be violent. But opponents to this view counter that such games actually *prevent* violent behavior by providing a safe outlet for aggression. Over two hundred published scientific studies have tackled this subject in an attempt to find which of these views is correct.

There is no clinical proof that violent video games such as FPSs contribute to violent behavior, and the majority of studies on the subject conclude that a causal link does not exist. For example, after a study commissioned by the U.S. government reached this conclusion in 1999, Surgeon General David Satcher said: "we clearly associate media violence to aggressive behavior. But the impact was very small compared to other things. Some may not be happy with that, but that's where the science is." The most comprehensive meta-study of the available research, by psychologist Johnathan Freedman, found that the majority consensus from the available research was that a causal link between violent video games and violent behavior does not exist.

It is important to distinguish between correlational and causal links. If some people are naturally predisposed to violence, independent of playing video games, then they may choose to purchase and play such games in greater numbers than those who abhor violence. Therefore, those who play video games may actually be more violent than those who do not, but it would be unjustified to conclude that the video game increased violent tendencies. The most obvious example of this would be gender differences — the population of violent video game players includes a higher percentage of males than the general population, and so would be expected to exhibit more aggressive tendencies.

Most FPS games have a voluntary ESRB rating of T (for Teen) or M (for Mature audiences), but sale of these games to children in the USA was not moderated or enforced until late in 2003, when it was announced that a number of major retail outlets such as Wal-Mart and Best Buy, which account for a large share of video game sales, would begin restricting sales of "M"-rated games to people under the age of 17. There is no national law in the United States prohibiting sale of such games to children, but bills have recently been proposed that would prohibit the sale of games to customers under the ESRB rating's age. Video game industry professionals oppose such a law, citing that the ESRB is a voluntary rating and similar rated materials are not regulated, such as the MPAA film rating system's minumum age for movie patrons.

List of notable titles and development houses

Selected list of FPS developers

This is a short list of developers of first-person shooters who have achieved both critical and popular success, selling many units, developing lucrative intellectual properties into series of titles and/or creating strong followings that transcend the core FPS gaming audience and touched the mainstream media:

3D Realms: 3D Realms is also notable as an old developer, having its beginnings in Apogee Software, a veteran of shareware PC gaming. It has released only two FPS titles: Duke Nukem 3D (1996) and Shadow Warrior (1997). However, both were very popular — especially Duke Nukem 3D, which was a smash hit (albeit a controversial one). A sequel to Duke Nukem 3D, Duke Nukem Forever, has been in development for many years.

Bungie Studios: Bungie is a developer who has trodden outside of the FPS genre on a number of occasions. Their first success in the genre comes from the critically acclaimed Marathon (1994), a game for the Apple Macintosh, notable at the time for having a story and letting the player look up and down, among other things. Their breakthrough to the mainstream FPS world came with the Xbox flagship title Halo.

Epic Games (formerly Epic MegaGames): Another developer from the pre-FPS days of computer gaming has not been active in the FPS market as long as some others, but with the release of the widely acclaimed Unreal (1998) (which spawned a large series of games, many of them with well supported, thriving mod communities) and with the popularity of the Unreal engine amongst developers, the company has become a major player in the scene.

id Software: Developers of the extremely successful Doom (1993) and Quake (1996) series, they are one of the old school of game developers that has its beginnings in pre-FPS gaming, and is considered by most gamers as the original definer and populizer of the genre. Their technology has also been used in creating many other highly successful games. The developer's involvement with mod communities is limited in comparison to others, but its games have none the less spawned some of the most well known mod types: capture the flag and Team Fortress among them.

LucasArts: LucasArts was a phenomenally successful PC game developer in the 1990s and continues that success today, though perhaps not with the same vigour. It has developed unique franchises and exploited both the Indiana Jones and the Star Wars IPs. Two of the most successful entries to their Star Wars collection of titles are Star Wars: Dark Forces and Star Wars Jedi Knight: Dark Forces II, which are recognized by critics as amongst the best Star Wars and FPS games produced to date.

Rare: Rareware is a recognizable name to console fans for many different titles, but their foray into first-person shooter territory is especially notable because it produced the first successful console FPS: GoldenEye 007 (1997). It was also one of the most popular titles on the Nintendo 64. Their next FPS, Perfect Dark (2000), was described as a "spiritual sequel" to GoldenEye, based around Rare's own characters and storyline rather than the James Bond licence. They have since released a second game in the franchise, Perfect Dark Zero (2005) for the Xbox 360.

Raven Software: Raven Software is generally most credited for being a pseudo sister company for id Software, since they have been collaborating together from as early as Doom. Since then, Raven has gone to use all of id's game engines for their own creations, which has resulted in Heretic, Star Trek: Voyager Elite Force, and the controversial Soldier of Fortune games. In 2002 LucasArts employed them to produce the critically acclaimed sequel to Jedi Knight, Star Wars Jedi Knight II: Jedi Outcast (and later on, the spinoff Star Wars Jedi Knight: Jedi Academy). Raven's latest game is currently Quake 4.

Red Storm Entertainment: The developer of the long running Rainbow Six (1998) series of Tom Clancy affiliated tactical realism first-person shooters have found great success with this franchise.

Valve Software: Valve's inclusion in this list rests on the immense success of their first game, Half-Life (1998). Its mod, Counter-Strike had an effect on popular culture comparative to that of Doom, in that it created yet again mass awareness for the genre in the mainstream. Additionally, it was highly supportive of the modding community: so far it had brought numerous mods into its official line, which included but was not limited to Team Fortress Classic, Counter-Strike, and Day of Defeat. Valve has released the sequel of their game, Half-Life 2, which has a publically available SDK including mapping, animation, and sound tools; as well as source for the game logic in Half-Life 2.

Selected important games in FPS development

A chronoglogical listing attempting at listing the more "ground-breaking" or "influential" games from this genre, mainly the more popular or well known examples:

Maze War (1973)

Battlezone (1980)

3D Monster Maze (1981) — the first 3D game for a home computer, requiring the player to navigate a 3D maze in the first person avoiding a lurking dinosaur.

Ultima Underworld (1992) — An “unsung hero” of the FPS genre, and perhaps the first game to belong to it properly. The player character could defeat enemies with projectile weapons (bows, crossbows) or with melee weapons (swords, cudgels, etc.). Technologies such as walls of varying heights, non-perpendicular walls, inclined surfaces, and swimming were ahead of their time. A moderate commercial success, it was soon overshadowed by subsequent titles that nonetheless used inferior technology.

Wolfenstein 3D (1992) — The first resounding commercial success of the FPS genre. Also a turning point in the history of shareware. Although limited to perpendicular walls and floors and monochrome ceilings and floors, the game became very popular as many players’ first encounters with the first-person perspective in a computer game.

Pathways Into Darkness (1993) — Arguably the earliest first-person shooter for the Apple Macintosh, mixes RPG and adventure elements with action. Also noteworthy for being the "spiritual prequel" to Marathon and Halo.

Doom (1993) — This game was as influential in the future of the FPS genre as any game has ever been. Much closer to a true 3D experience than Wolf 3D (but still perhaps less so than Ultima Underworld), it added walls of varying heights and new lighting effects. Much of the controversy over video-game violence was attributed to this title.

Descent (1994) — Some consider this game to the first true 3D FPS. This game was unique among FPSs at the time when most FPSs were considered Doom-clones. The player flew into robot infested mines in a hovercraft with a full six degrees of freedom of movement. Enemies were represented by true 3D polygon meshes, which Quake would later use, and the representation of the world geometry removed most of the 2.5D limitations that Doom had.

Marathon (1994) — The first in a trilogy - possibly the most popular series among veteran Mac users; notable for its extremely complex storyline.

Star Wars: Dark Forces (1995) — This game, based on the Star Wars franchise, was LucasArts's attempt to corner the FPS market. Through its particular variety of gameplay additions, rather than its use of a popular franchise, Dark Forces sticks out as a remarkably playable example of an early FPS. While less noted than other titles, it is arguably as influential in the genre.

Duke Nukem 3D (1996) — This early FPS is better remembered by more fans of the genre than even Doom. Serious fans generally accept Doom as more important, but Duke was more widely publicised in its time and so has a greater mass appeal.

Quake (1996) — The first true 3D "standard" FPS (Descent being the notable exception), it started the move to true 3D in the FPS genre. It also started the big wave of popularity of online multiplayer games by allowing multiplayer games to take place over the internet.

GoldenEye 007 (1997) — The first successfully implemented FPS on a console, GoldenEye was acclaimed for a strong, realistic single-player mode and a highly popular multiplayer section.

Unreal (1998) — One of the first FPS games to take place in large, open terrain, and a technological and visual breakthrough at the time.

Starsiege: Tribes (1998) — The first FPS to seamlessly integrate first person shooting with vehicles driven from a third person perspective.

Half-Life (1998) — Used a lot of scripted events to tell its story and set the mood; the level of artistry inherent to both the story and gameplay raised the standards of the FPS industry to new heights.

Soldier of Fortune (1999) — Using a highly modified Quake 2 engine, Soldier of Fortune added location-based damage, as well as other less important advances.

Thief (1998) — The first first-person "sneaker".

Rainbow Six (1998) — The first realistic, squad-based FPS to gain a wide following and acclaim. Numerous sequels have been made. The first FPS game to fall into the "simulation" category.

System Shock 2 (1999) — This was one of the first games to successfully implement an interesting story and RPG elements into the gameplay.

Counter-Strike (1999) — Still the most popular FPS "game", Counter-Strike is a Half-Life MOD that quickly won popular acclaim and helped redefine the multiplayer genre.

Deus Ex (2000) — An RPG-FPS hybrid and a massive success that many critics cited as an example of "video games as art".

Halo: Combat Evolved (2001) — The first successful FPS on a console since GoldenEye, Halo also featured an expanded role for vehicles in game and cinematic elements which appealed to a wide audience.

Battlefield 1942 (2002) — The most successful large scale, vehicle-based FPS in the vein of Tribes, BF1942 has popularized an expanding genre of massive-scale online FPS games.

Metroid Prime (2002) — Classic Metroid gameplay merged with an FPS.

Star Wars: Jedi Knight II: Jedi Outcast (2002) — Saber dueling was very well implemented with advanced melee fighting.

Doom 3 (2004) — The first game to calculate all lighting in real-time and to use an unified lighting system (with no lightmaps).

Half-Life 2 (2004) — Direct sequel to Half-Life. The game continued the narrative techniques of the first title, but the implementation of the physics engine was particularly noteworthy. This can be considered the first FPS game to make extended use of physics puzzles.

A partial list of "notable", "ground-breaking", and "influential" FPS games:

> .kkrieger — America's Army — Blood — Brothers in Arms: Road to Hill 30 — C&C Renegade — Call of Duty series — Clive Barker's Undying — Damage Inc — Daikatana — Delta Force series — Far Cry — Giants: Citizen Kabuto — Halo 2 — Heretic — HeXen — Hired Guns — Hidden and Dangerous — IGI — Ken's Labyrinth — Kingpin (computer game) — MechWarrior — Medal of Honor — Nitemare 3D — No One Lives Forever — Operation Flashpoint — Painkiller — Perfect Dark — PlanetSide — Return to Castle Wolfenstein — Rise of the Triad — Sin — Serious Sam — Shadow Warrior — Star Trek: Voyager Elite Force — Star Wars: Battlefront — The Stone Throwers — Special Force — Starsiege — Team Fortress Classic — Terminator — Trespasser — Turok: Dinosaur Hunter — Tron 2.0 — Under Ash — The Chronicles of Riddick: Escape from Butcher Bay

For a comprehensive list of the genre, see the **list of computer and video games by genre**.

See also

- List of computer and video games
- MMOFPS
-

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Third-person Shooter

Third-person shooter is a genre of 3D video games where the camera view is outside and thought of as usually being behind the main player character, its name chosen for the number of third-person video games whose gameplay is derivative of first-person shooters. Because so many games employ third-person cameras, however, and shooting, much confusion exists over what qualifies as a third-person shooter and what doesn't. Games such as Max Payne fit into the former category, embodying gameplay that mostly consists of shooting. A number of shooters, including The Suffering, bridge the gap between first-person shooters and this kind of game by offering either first- or third-person cameras.

The other use of the term third-person shooter is harder to pin down. The Resident Evil series, though it incorporated both third-person gameplay and shooting, was not considered a third-person shooter until Resident Evil 4; because of the emphasis on adventure and survival, this was called survival horror. In contrast, the GTA series from GTA III and up has been labelled by some as a third-person shooter, but combines driving and RPG elements along with elements from the other description.

An alternative phrase for this is a "shoot 'em up", condensed by fans into "shmup".

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Rail Shooter

A **rail shooter** or **on-rails shooter** is a specific form of game play in an action-based video game. In a rail shooter the player control is limited to directing where to fire a virtual gun; the player does not have control over the ultimate path their avatar takes from the start to the end. The player's viewpoint moves as dictated by the game. It is commonly viewed as the player being tied to a rail, similar to a roller coaster. Although the strictest definition of rail shooter includes genres such as a scrolling shooter and light gun games such as Operation Wolf, in practice the term is used mostly to describe games that don't fall within those two genres (e.g. Starfox).

Traditional Rail Shooter Games

As described earlier, the term rail shooter traditionally describes games where the player cannot control their own movement, the gameplay being limited to aiming from a third or first-person perspective. Notable examples of this genre include Panzer Dragoon and Rez. The label is also sometimes used for games played from a third person perspective where their player can move their avatar in a limited way. For example, Starfox, a game where the player can move their ship on a two dimensional plane, but the ship itself is always flying in a straight line. These games have more in common with scrolling shooters than rail shooters. However, this genre does not feature as many enemies or bullets as scrolling shooters because the perspective makes dodging and aiming inherently more difficult. One of the earliest games in this genre was Buck Rogers and the Planet of Zoom, but the seminal game of the genre was Space Harrier.

Light-Gun Games

Most light gun games fall into the rail shooter genre. In light gun games, usually the player's sole defense against enemy attacks in the game is shooting the enemy first. Enemy projectile attacks such as missiles or thrown knives usually move slow enough for the player to destroy or deflect in midair with a shot. Input from the player may come in the form of aiming a toy gun or moving a joystick. The toy gun versions may detect the player's aim by synchronizing to the refresh rate of the screen (light guns), or attaching the gun to a movable base that measures rotation. Modern arcade games are more likely to use specialized guns. *Silent Scope*, a sniping arcade game, features a small screen in the eyepiece of the toy rifle. The player uses the main screen to locate targets and the magnified view in the eyepiece to line up shots.

Some rail shooters move players along a generally continuous path, others pause the player at a particular location until all enemies are defeated.

Early rail shooters include Space Harrier and Lethal Enforcers. Motion in early rail shooters was often simply left and right. Some rail shooters display enemy targets against prerendered video backgrounds, this includes games like Area 51; others, like the Virtua Cop series, use 3D graphics. Modern rail shooters move the player's viewport in three dimensions; these include shooters such as Panzer Dragoon Orta.

Very early games in the style did not move the viewpoint at all and would typically be described more correctly as shooting gallery games.

Like all game play styles lines are not strict. Many first person shooters feature brief rail shooter scenes in which the player's avatar mans vehicle mounted weaponry while the game controls the vehicle. Some rail shooters allow the player to control a single aspect of motion; for example, the Time Crisis series, which gave players the ability to hide behind a barrier.

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Counter-Strike

Counter-Strike (**CS**) is the generic name given to a series of team-based tactical shooter games which originate with ***Counter-Strike***, a total conversion mod of Valve Software's first-person shooter *Half-Life*. The series also includes ***Counter-Strike: Condition Zero*** and ***Counter-Strike: Source***.

Counter-Strike pits a team of counter-terrorists against a team of terrorists in rounds of competition won by completing an objective or eliminating the opposing team. The latest incarnation of the game, Counter-Strike: Source (CS:S), is based on the Source engine developed for Half-Life 2. CS is widely acknowledged as the most successful and popular of the tactical shooter genre. Signs of CS's wide influence can be found in mods for Quake III Arena, Unreal Tournament, and other standalone shooters such as Global Operations and Soldier of Fortune II.

CS has been the most widely played online FPS for the past few years. In 2002 there were over 30,000 Counter-Strike servers on the Internet (second place was Unreal Tournament with about 9,800). In 2004, GameSpy statistics showed over 85,000 players simultaneously playing Counter-Strike at any point in time, accounting for almost 70 percent of the online FPS audience. According to statistics gathered by Valve's content-delivery platform, Steam (1), these players contribute to over 4.5 billion minutes of playing time each month, making it the most popular online FPS in history. CS was originally played online through the WON gaming service, but it was shut down in 2004, forcing players to switch to Steam (although some players responded by creating their own WON network, dubbed WON2).

Gameplay

Counter-Strike is a team-based FPS in which players join either the Terrorists (T's) or the Counter-Terrorists (CT's). Server settings may automatically balance when one team has more players than the other. Each round starts with the two teams spawning simultaneously, as one of eight different default character models (four to choose from for both Counter-Terrorist and Terrorist. Counter-Strike: Condition Zero added two extra models, bringing the total to ten). Each player generally starts with $800, two magazines of ammunition, a knife, and a pistol: a Heckler & Koch USP .45 Tactical for CTs or a GLOCK 18c for Ts. Players are generally given a few seconds before the round begins (known as Freeze Time) to buy equipment but not move. Players may buy equipment whenever they are in a buy zone for their team (some of which can be for both teams) and the round has not been in session for longer than a specified time (90 seconds is default). Surviving players retain their equipment in the next round; those who have died begin anew with pistol and knife.

Standard bonuses in the game are:

- Win a round: $3500
- Lose a round: $1500
- Kill an enemy: $300

The scoreboard shows team scores plus data for each player: name, score, deaths, and ping/latency (ms) on the map. The scoreboard also shows whether each player is dead, carrying the bomb (in bomb defusal maps), or the VIP (in assassination maps), although the player must be dead during the round to obtain this information of players on the opposing team.

Players killed become "ghosts" for the duration of the round; they cannot change their names, nor can their chat/voice messages be received by the live players (unless the cvar sv_alltalk is set to 1). They are generally able to watch the rest of the round from multiple selectable views, although some servers disable some of these views to prevent dead players from relaying information about living players to their teammates through alternative media (most notably voice in case of Internet cafes). This technique, known as "ghosting", is considered cheating in many tactical shooters.

Counter-Strike is meant to be more realistic than futuristic FPSs such as Quake III Arena and Unreal Tournament, but is also built to keep the action flowing faster than more realistic tactical shooters such as the Rainbow Six and Ghost Recon series. For example, relatively few shots will kill a player, and shots to different parts of the body deal different amounts of damage, but damage has no bearing on ability to run or jump, allowing a player with just a few hit points remaining to keep fighting. However, movement is restricted while taking damage from gunfire.

There are several game types in *Counter-Strike* which define the objectives of each team in the game, and rules which determine which team wins. Each map is of a single game type.

Bomb Defusal

One Terrorist begins the round carrying a bomb. The Terrorists' objective is to plant the bomb at a bomb site (of which there usually are two in a map, Bombsite-A or Bombsite-B), and ensure its detonation. If the bomb has not been planted, if all the members of one team have been eliminated, then the surviving team wins. If the bomb has been planted and proceeds to explode, the Terrorists win, but if a Counter-Terrorist defuses the bomb (Counter-Terrorists can purchase an optional kit to speed up defusal times), the Counter-Terrorists win. When the round time expires, the Counter-Terrorists win. Deaths due to the detonation of the bomb do not increment the player's death count. Maps of this type are prefixed with *de_* (e.g. de_dust and de_inferno). Professional tournaments are normally only played in Bomb Defusal maps.

Hostage Rescue

The map has hostages (usually four) generally placed near the Terrorist base. The Counter-Terrorists' objective is to escort the hostages to a hostage rescue point on the map. If all the members of a team have been eliminated, the prevailing team wins. If all the surviving hostages have been rescued, and that number is at least half of the initial hostage count, then the Counter-Terrorists win, and each Counter-Terrorist is awarded $2400. When round time expires, Terrorists win. Therefore, the game may effectively become a 'Terrorist hunt' game if enough hostages are killed, although server settings may be such that players are disconnected (kicked) from the server after killing a certain number of hostages (5 is default). When a Counter-Terrorist 'uses' a hostage (i.e. begins to rescue it), the Counter-Terrorist is awarded $150. Upon successfully escorting a hostage to a rescue point, $1000 is awarded. Killing a hostage incurs a penalty of $2250. There is also a penalty associated with injuring a hostage by gun fire or grenade shrapnel (hostages do not take damage for falling). Maps of this type are prefixed with *cs_* (e.g. cs_office).

Assassination

In this mission, one Counter-Terrorist member becomes a VIP, a player with 200 units of Kevlar and nothing more than the Counter-Terrorist standard-issue USP pistol with one extra magazine. The VIP may not pick up dropped weapons other than the VIP's own pistol. The VIP's objective is to reach an extraction zone (1, normally), in which case the Counter-Terrorists win. If the VIP dies, the Terrorists win. As usual, if all Terrorists die, the Counter-Terrorists win. When time expires, Terrorists win. The lack of ammunition for the pistol means that a VIP should not expect to escape without the team's assistance; however, the pistol in conjunction with the special armour provides adequate protection. Maps of this type are prefixed with *as_*. Assassination maps are the least played of the three types of *Counter-Strike* gameplay and they were not ported to *Counter-Strike: Source*, although a *VIP mod* is being produced by the community for *Counter-Strike Source* and surprisingly for some, is being greatly anticipated. Members of the community who dislike the scenario argue that the Terrorists would just camp at the VIP's escape destination, shooting the VIP dead as he attempted the run to the exit.

Escape

Discontinued in the late-beta releases of *Counter-Strike*, this gameplay style put Terrorists against Counter-Terrorists in an escape-before-the-clock-expired mission. The Terrorists started in a position relatively far away from the Counter-Terrorists, armed with only knives and Glocks and unable to purchase additional weaponry/ equipment. Weapons, armour, and grenades were placed in hidden locations near or around the spawn point of the Terrorists; the objective was for the Terrorists to secure weapons at the hidden location and then have all living members of the team reach an escape point before the clock ran out; eliminating all Counter-Terrorists would not complete the mission by itself. The Counter-Terrorists' objective was to prevent the escape of the Terrorists. Escape was discontinued because such maps gave an edge towards Counter-Terrorists. Maps of this type are prefixed with *es_*. While not included in the current *Counter-Strike* distribution, this mode can still be played. The most popular maps of this type are es_jail, es_riverside, es_frantic, and es_trinity.

History

The *Counter-Strike* team was formed by Minh Le ("Gooseman") and Jess Cliffe ("Cliffe") in 1999. Counter-Strike Beta 1.0 was released in June that same year, followed by a relatively quick succession of the beta releases (by the end of 1999, beta 5.0 had been released). CS gained in popularity just as rapidly. The Counter-Strike team was acquired by Valve to turn the fan-created mod into an official mod for Half-Life. In November 2000, Counter-Strike 1.0 — the first non-beta, official retail version of the game — was released. The retail version was a standalone alternative that does not include or require Half-Life; alternatively, existing Half-Life owners can download the Counter-Strike mod free. Later, Counter-Strike was bundled with Half-Life and several other expansions in the Platinum Pack. The newest version of CS was labeled Source, released in November 2004 through Valve's new distribution platform called Steam. Counter Strike:Source was developed using the new Half Life 2 enhanced graphics and physics engine (Source).

Valve has also been attempting to cash in on the game's popularity by producing more *Counter-Strike* games. Valve released a version ported to the Xbox game console in November 2003. It features basic single-player gameplay against bots, but it focuses on multiplayer online play like the original. However, the Xbox version of the game (playable on Microsoft's Xbox Live online game service) has proved less successful than its PC counterpart for obvious reasons; the online *Counter-Strike* audience for Xbox is well outnumbered by the existing *Counter-Strike* PC community, a subscription cost required to pay online on Live (playing the PC version online is free), and mediocre graphics (only texture upgrades to original CS models) which are below what is expected for the Xbox. For similar reasons, Valve may have made no attempt to have *Counter-Strike* ported to the PlayStation 2.

Counter-Strike: Condition Zero

A long-awaited single-player version of the game called *Counter-Strike: Condition Zero* was released on March 23, 2004. It had been plagued by numerous delays, most notably when Valve dropped Gearbox Software (who had developed the highly acclaimed Half-Life: Opposing Force) as developer in favor of Ritual Entertainment, and when Ritual Entertainment in turn lost the project to Turtle Rock Studios partway through development.

Though still very similar to CS 1.6, *Condition Zero* contains several graphical, sound, model and map changes, as well as including bots. However, the game was criticized for not being up to the standards of graphical quality expected of current commercial releases, due to the limitations of 1998's GoldSrc *Half-Life* engine. It sold poorly compared to the original.

Counter-Strike: Source (CS:S)

In 2004, original *Counter-Strike* developers Minh Le and Jess Cliffe, along with members of Valve and the Day of Defeat team, brought *Counter-Strike* into the Source engine as an obvious choice for the multiplayer component of *Half-Life 2*. Following a period when the game was available to select 'beta' testers, the alpha version of the game was released on October 7th 2004.

Counter-Strike: Source (CS:S) was released to ATI Radeon Voucher holders, in *Half-Life 2* bundles available on *Steam*, and with the boxed retail version of the game. Changes include the improvements inherent to the Source engine (such as better graphics and physics) as well as updated models, animations, maps, sounds, and some small gameplay changes. It is available today for download over *Steam*, bundled with *Half-Life 2*, or purchased in a stand-alone retail box along with Day of Defeat: Source, another game converted to the new graphical engine.

Map types

There are three official types of maps in *Counter-Strike*, along with many more user-created types. The three official types include "cs_" (Hostage rescue), "de_" (Bomb defusal), and "as_" (Assassination). In earlier beta versions of the game another official type called "es_" (Terrorist Escape) also existed.

Player models

Corresponding player models for both Terrorists and Counter-Terrorists have appeared through development. The following eight are the original models which were to be (or are in the process of being) reproduced in Counter-Strike: Condition Zero and Counter-Strike: Source. *Condition Zero* also added two additional models; the Midwest Militia for Terrorists and the Spetsnaz for Counter-Terrorists.

On the matter of the best model for competitive play in *Counter-Strike*, Whisper's Wiki recommends that:

> Firstly, all players on one team should choose the same skin. As Terrorists you should choose the Elite Crew model. And as Counter-Terrorists, the GIGN model. "5 guys popping in and out 1 at a time will look like the 1 guy if you all have the same skin. Elite Crew is the skinniest and hardest to see model most of the time, and the GIGN model has the smallest head for Counter-Terrorists."

Counter-Terrorist models

All names are taken from real groups.

- **SEAL Team 6** - First appeared in initial CS beta.
- **GSG-9** - Added in CS beta 6
- **SAS (Special Air Service)** - Added in CS beta 5
- **GIGN** - Added in CS beta 3

Terrorist models

All (understandably) fictional.

- **Phoenix Connexion** - First appeared in initial CS beta
- **Elite Crew** - Added in CS beta 3
- **Arctic Avengers** - Added in CS beta 6
- **Guerilla Warfare** - Added in CS beta 6.5

Other models

- **Hostage** - used in maps prefixed 'cs_' eg: cs_italy.
- **VIP** - Used in maps prefixed 'as_' eg: as_oilrig.

Culture

Counter-Strike is famous for the culture surrounding it, which includes everything from professional gamers and leagues, to cheating and disruptive behavior. Certain professional teams (such as SK, Team 3D and Team NoA) and players (Ksharp and HeatoN, for example) have achieved a measure of fame.

Legacy of *Counter-Strike*

While *Counter-Strike* is nowadays perhaps the most professionally played computer game in the world behind StarCraft in South Korea, most players simply ignore the professional side of the game and play for fun. The success of the game among both casual and competitive players highlights the wide appeal of *Counter-Strike*'s simple game model. *Counter-Strike* has had a colorful and dramatic history which reaches far beyond what this document could hope to cover, and still remains extremely popular to this day.

Half-Life and other contemporary games took full advantage of the advent of hardware graphics acceleration in the late 1990s, replacing earlier software-rendered games such as Quake. Likewise, gamers were expected to abandon the DirectX 5.0 Half-Life and its mods in favour of games utilising the hardware T&L capabilities of DirectX 7.0 graphics cards such as the Nvidia GeForce and ATI Radeon. However, the universal shift to the DirectX 7.0 level and beyond has not happened, and the continued popularity of CS has given older video cards such as the 3dfx Voodoo 3, ATI Rage 128, and Nvidia RIVA TNT2 continued usefulness. Indeed, one possible reason for *Counter-Strike*'s continued popularity is that almost any PC made since 1997 can play it since the game does not need the powerful CPU and video card required of many current FPS games.

But as the the criticisms of *Condition Zero* showed, many players feel that the GoldSrc engine has reached its limits in its capacity to evolve and to stay updated. *Counter-Strike* was realistic for its time, but is dated in comparison to more recent first-person tactical shooters. There is a growing frustration that the developers are unwilling to make official changes or add new features, maintaining the same map layouts and weapons to appease longtime CS players. Even *Counter-Strike: Source* has been criticised for not progressing the gameplay enough and failing to take full advantage of the Source engine.

There have been a multitude of games claimed by their developers, reviewers and fans to be "*Counter-Strike* killers", but none have seriously been able to dent its overall popularity. Server statistics in 2002 showed that *Counter-Strike* servers outnumbered their *Battlefield*, *Unreal Tournament 2003* or *Quake III* FPS counterparts at least 3 to 1. The prohibitively expensive cost of an up-to-date gaming PC makes it unlikely that another game will become as popular as *Counter-Strike* has been.

Mods and scripts

Even though *Counter-Strike* is itself a mod, it developed its own community of script writers and modders. There have been many different mods and scripts to:

1. Add robot players to make a LAN game multiplayer although there is only one computer
2. Improve gameplay
3. Remove features of the games which players felt were annoying
4. Give players superhuman powers (powers from units in *Warcraft III*, for example.)
5. Make the game more humourous
6. Create different modes of play
7. Control players not following set rules
8. Keep track of player statistics and scores
9. Provide options for weapon improvement (AKA Skinning: Affects the way guns look and sound to the user but remain unchanged to anyone else in the game. Only the user sees the differences. The weapon's attributes remain the same.)
10. Give server administrators more flexible and efficient control over his/her server. "Admin plugins", as they are mostly referred as, have become very popular. One of the most successful, if not the only one, "Mani Admin Plugin", is met on nearly every dedicated server nowadays. Features include: varieties of teamkill punishes, auto-kick by certain triggers, rank system, advanced map changing and voting etc.

See also

- First-person shooter

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God Games

A **God game** is a computer game that lets you create and control the lives of virtual people, cities or worlds. The category has drawn the interest of some of the best-known game designers in the world, often propelling them to prominence. Major examples of the genre are:

City, Nation, World Level

Utopia by Don Daglow, published by Mattel for Intellivision (1982)
SimCity by Will Wright, published by Maxis for many systems (1989)
Populous by Peter Molyneux at Bullfrog for the Commodore Amiga

and Atari ST (and later for other systems) (1989)
SimEarth by Will Wright, published by Maxis for many systems (1990)
ActRaiser by Tomoyashi Miyazaki, published by Square Enix for SNES (1990)
Civilization by Sid Meier, published by Microprose for many systems (1991)
Age of Empires by Rick Goodman, Bruce Shelley et al at Ensemble Studios, published by Microsoft for PC
Black and White by Peter Molyneux, Ron Millar et al at Lionhead and distributed by Electronic Arts (2001)
Spore by Will Wright, to be published by Electronic Arts for the PC

Individual Level

Little Computer People by David Crane, published by Activision for Apple II and Commodore 64 (1985)
Alter Ego by Peter J. Favaro, published by Activision for Apple II, PC and Commodore 64 (1986)
The Sims by Will Wright, published by Electronic Arts for the PC (2000)

God Games vary from mathematic simulators to creative games. The name is derived from reference to games in which the character plays a godlike entity that controls entire worlds; *Populous* is generally credited with inspiring the name.

In many God Games, the player does not win or lose *per se*, but is challenged to attain and maintain a level of success and with the absence of goals or objectives the player often experiences a greater deal of freedom in such games than other genres.

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Maze

A **maze** is a tour puzzle in the form of a complex branching passage through which the solver must find a route. This is different from a labyrinth, which (strictly speaking) has an unambiguous through-route and is not designed to be difficult to navigate (despite the common uses of the word to indicate various complex, confusing structures).

The pathways and walls in a maze or labyrinth are fixed. Maze-type puzzles where the given walls and paths may change during the game are covered under the main puzzle category of tour puzzles.

One type of maze consists of a set of rooms linked by doors (so a passageway is just another room in this definition). You enter at one spot, and exit at another, or the idea may be to reach a certain spot in the maze.

Mazes have been built with walls and rooms, with hedges, turf, or with paving stones of contrasting colors or designs, or in fields of crops such as corn or, indeed, maize. Maize mazes can be very large; they are usually only kept for one growing season, so they can be different every year, and are promoted as seasonal tourist attractions.

Mazes can also be printed or drawn on paper to be followed by a pencil or fingertip.

One of the short stories of Jorge Luis Borges featured a book that was a literary maze.

Various maze generation algorithms exist for building mazes, either by hand or by computer.

Solving mazes

The mathematician Leonhard Euler was one of the first to analyse plane mazes mathematically, and in doing so founded the science of topology.

The following algorithms are designed to be used inside the maze by a traveler with no prior knowledge of the maze's layout. There are other algorithms that can be used for solving paper mazes, where the solver has an overview of the maze.

Wall follower

The wall follower, the best-known rule for traversing mazes, is also known as either the *left-hand rule* or the *right-hand rule*. If the maze is *simply connected*, that is, all its walls are connected together or to the maze's outer boundary, by keeping one hand in contact with one wall of the maze you are guaranteed not to get lost and will reach a different exit if there is one; otherwise, you will return to your entrance. If the maze is not simply connected, this method will not help you to find the disjoint parts of the maze.

Wall following can be done in 3D or higher dimensional mazes if you project its higher dimensional passages onto the 2D plane in a deterministic manner. For example, in a 3D maze pretend up passages actually lead northwest, and down passages actually lead southeast, and then apply the standard wall following rules.

Pledge algorithm

Disjoint mazes can still be solved with the wall follower method, if the entrance and exit to the maze are on the outer walls of the maze.

If however, the solver starts inside the maze, it might be on a section disjoint from the exit, and wall followers will continually go around their ring. The Pledge algorithm (named after Jon Pledge of Exeter) can solve this problem.

The Pledge algorithm, designed to circumvent obstacles, requires an arbitrarily chosen direction to go towards. When an obstacle is met, one hand (say the right hand) is kept along the obstacle while the angles turned are counted. When the solver is facing the original direction again, and the angular sum of the turns made is 0, the solver leaves the obstacle and continues moving in its original direction.

This algorithm allows a person with a compass to find their way from any point inside to an outer exit of any finite and fair 2 dimensional maze, regardless of the initial position of the solver. However, this algorithm will not work in doing the reverse, namely finding your way from an entrance on the outside of a maze to some end goal within it.

Random mouse

This is a trivial method that can be implemented by a very unintelligent robot or perhaps a mouse, but which is not guaranteed to work. It is simply to proceed in a straight line until an obstruction is reached, and then to make a random decision about the next direction to follow. This will of course fail if the exit is, or is only reachable by, an opening in the middle of a wall.

Tremaux's algorithm

Tremaux's algorithm is an efficient method that requires drawing a line on the floor to mark your path, and is guaranteed to work for all mazes that have well-defined passages. On arriving at an unmarked junction, pick any direction. If you have visited the junction before, return the way you came. If revisiting a passage that is already marked, draw a second line, and at the next junction, take any unmarked passage if possible, otherwise take a marked one. You will never need to take any passage more than twice. If there is no exit, this method will take you back to the start.

See also [1]

Generating Mazes

There are many different approaches to automate the generation of mazes.

Stack based approach

This is also the most simple way to generate a maze using a computer. Consider the space for a maze being a large grid of cells (like a large chess board), and each cell starts with 4 walls. Pick a random start cell and then select a random neighbouring cell that has not yet been visited. Remove the 'wall' between the two cells and add the new cell to a stack (this is analogous to drawing the line on the floor). Continue this process, if you ever get to a cell that has no unvisited neighbours then you have come to a dead-end. When at a dead-end backtrack through your path (pop from the stack) until you get to a cell with an unvisited neighbour, continue your path generation by visiting this new, unvisited cell (creating a new junction). This process continues until you have visited every cell, causing you to backtrack all the way back to the beginning cell. This approach guarantees that the maze space is completely visited. As stated, the algorithm is very simple and does not produce overly complex mazes. More specific refinements to the algorithm can help to generate harder to solve mazes.

Mazes open to the public

Hoo Hill Maze, Shefford, Bedfordshire, UK.
Hampton Court Palace, England (hedge maze)
Chatsworth, England (hedge maze)
Samsø, Denmark (the biggest maze in the world)
Schönbrunn Palace, Austria (small entrance fee, tower at the center to overlook the hedge maze)
Longleat, England (hedge maze)
The Crystal Palace, England. A tiny maze in the park.
Hedge maze at Leeds Castle, Maidstone, Kent, England. This is one of over 500 mazes worldwide which have been designed by Adrian Fisher
Beauty Hill Farm, Chichester, USA (field maze). A maze mowed in a hay field where people search out colored flags for clues.
The Maze on Centre Island, Toronto, was a Centennial gift to the city by its Dutch-Canadian community in 1967. This topiary maze is open to public for free year-round
Davis' Mega Maze, Sterling Mass USA (hedge maze). Part of the farm (also owned by Davis), it draws quite a crowd from the surrounding area. Designed by Adrian Fisher, the maze is known by many kids as

the the "candy maze", because the bridges in the maze give out candy. Labyrinthe du Hangar 16, Montreal, Canada.

Maze by Christopher Manson

Maze (Henry Holt & Company, Inc.; (February 1989), ISBN 0805010882), billed as "The World's Hardest Puzzle", is a 45-room house in the form of a book. A party of naïve adventurers is led through by an unnamed poet/architect, whose identity is a subject of much speculation. Each page is a room, with hundreds of possible visual clues in the picture along with the numbers of the rooms that can be entered, and a page describing the actions of the narrator and the adventurers which may contain even more clues. The object is to reach the "center" (Page 45), answer the riddle found there, and get back out in the fewest possible steps (16).

- Online version
- Solution to the riddle and connectivity matrix

Mazes in science experiments

Mazes are often used in science experiments to study spatial navigation and learning. Such experiments typically use rats or mice. Examples are

- the Barnes maze
- the Morris water maze
- the radial arm maze.

Other types of mazes

Logic mazes

These mazes use some rule other than "don't cross the lines" to restrict motion. Examples are

- Area-mazes or A-mazes, which the area of the tile you step on has to alternatingly increase and decrease with every step.
- Dice mazes, in which a die is rolled onto cells based on various rules.
- Number Mazes, in which a grid of numbers is navigated by traveling the number shown on the current square.
- Multi State mazes, in which the rules for navigation change

depending on how the maze has been navigated.

Mazes in higher dimensions

It is possible for a maze to have three or more dimensions. A maze with bridges is three dimensional, and some natural cave systems are three dimensional mazes. The computer game Descent utilized fully three- and four-dimensional mazes.

Picture maze

A maze that form a picture when solved.

Further reading

Adrian Fisher & Georg Gerster, The Art of the Maze, Weidenfeld & Nicolson (1990) ISBN 0297830279
Jeff Saward, Magical Paths, Mitchell Beazley (2002) ISBN 1840005734
W.H. Matthews, Mazes and Labyrinths: Their History and Development (1927). Includes Bibliography. Dover Publications (1970) ISBN 048622614X

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Computer Board Games

Computer board games are board games (such as monopoly, snakes and ladders, and trivial pursuit) that you play on a computer.

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Internet Games

Internet games refer to online video games that are played over the Internet. These include browser games, play-by-email games, MMORPGs, MUDs, and competitive multiplayer games such as Counter-Strike and Halo. Internet games usually allow people to play together, although in the case of some browser games this is sometimes limited to a shared high score list. Many Internet games have associated online communities, making Internet games a form of social activity beyond single player games.

Earlier in PC Gaming

Most online games in late 1980's were MUDs (Multi-User Dungeon/Dimension). These text based games served as entertainment to early users of the Internet who spent time in BBS forums. Scripted AI simulated the fantasy tabletop role-playing game rules and dice system from games like Dungeons & Dragons. (D) from MUD refers a tribute to this game. Players could connect to scripted fantasy worlds inspired by other fantasy settings, such as J.R.R. Tolkien's popular Lord of the Rings series. During that time mostly 4800b and 9600b modems were used to make proper connection to BBS in order to join MUDs.

Beginning of the Modern Online PC Gaming

Since late 90's online gamers are growing in positively due to access to broadband internet in countries. Especially in early developed countries like Sweden, Netherlands, Germany in Europe, US in America and as same fast growing Asia. First gaming communities established to play online with other real players all around the world.

Timeline

1995

- Many PC games published include the feature of playing the game in a local area network.

1997

- Blizzard Entertainment launches an online gaming service Battle.net, at the time making it possible to play Diablo in the internet.
- Half-Life: Counter-Strike is published and becomes very popular.
- The first MMORPG, Ultima Online is published. The game's subscription based membership costs around 10 dollars per month at the time.

1998

- StarCraft is published and becomes the most selling game. Online battles are officially started at Battle.net for Diablo and Starcraft. Profitable success of Blizzard encourages developers to develop online PC gaming further.

1999

- StarCraft is incredibly popular in South Korea. StarCraft matches are broadcasted on Korean television.

2000

- WCG Challenge tournament has held in Korea with the participation of 49 countries. Players from all around the world were met for the first time. Most of them knew each other from gaming networks such as Battle.net or Quake.net. IRC is the main communication tool for online gaming related discussions and online match schedulings. 64/128K ADSL, Cable modems are in favorite. Y2K Syndrome.

2001

- First inter-continentally successful video game console networking devices were brought to market by sixth generation era gaming consoles, as Sony released a network adaptor for PlayStation 2 in Japan (on 2002 in North America and on 2003 in Europe), Microsoft supplied their newly released Xbox with a built-in internet connector and Nintendo added the networking support for GameCube.

2004

- Half-Life 2, along with it's official mod Counter-Strike:Source is released.

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Computer Role-playing Games

Computer role-playing games (**CRPGs**), often shortened to simply **role-playing games** (**RPGs**), are a type of video or computer game that traditionally uses gameplay elements found in paper-and-pencil role-playing games. Modern RPG games encompass a wide range of styles and types of engines and have significantly branched out.

RPG gameplay elements can be found in real-time strategy games, first-person shooters, third-person shooters, and some other types such as massively multiplayer online games. However, games that are actually called just "RPGs" are usually limited to top-down perspective point-and-click and some third-person perspective types.

Overview

CRPGs, in general, are derivative of paper-and-pencil based role-playing games (RPGs) such as Dungeons & Dragons (D&D). For example, the vast majority of video-game RPGs assign various attributes to the characters, such as hit points (HP), magic points (MP), and levels. These games also tend to borrow the narrative structure of many paper-and-pencil RPGs; usually a group of heroes (a party) is sent on some sort of quest. Along the way, the adventurers face an endless barrage of enemies and monsters (often inspired by real-world mythology). An example is illustrated here, a status screen taken from Final Fantasy Tactics Advance. It includes the character's name, portrait, level (LV), current/total hitpoints (HP), and current/total mana (or magic) points. Other information includes basic stats and what sort of weapon, armor, and accessories the character is equipped with.

Character development

Video-game RPGs sometimes involve intricate plots and character development as characters advance through a large number of statistics, items and abilities. Players must usually choose which of several possible combinations of these things to acquire for their character in order to advance, and if possible, win the game. Just as in a paper-and-pencil RPG, the characters can be of various races (besides humans, mythical ones like elves) that differ in their capacities for professions (e.g., swordsmen, archers, thieves, mages). Characters can try to advance in two of these professions, but more is not effective. A recent development has been the goal-directed notion of "jobs", temporarily taking up a profession to gain a needed skill (like lockpicking). .

Setting genres

Although the word "genre" has come to be used for a type of computer game such as a driving game or a sports game, a need still exists for the old use of the word. Most RPGs are set in a fantasy world with a vaguely medieval setting, though with magic. Many add to this science fiction elements. Few differ from these two categories. EarthBound uses a child's viewpoint of the United States (or a place implied to be so) in the twentieth century. Wasteland and Fallout are set after a nuclear war. Many games are also structured around time travel.

Layout

Starting with Akalabeth, these games feature characters moving on more than one 2-D map. When the player-character in that game entered a dungeon, the viewpoint shifted to a first-person view of a 3-D maze. An example of the scales of what games have come to display on the screen starts with the world-map. It shows a large area, but not the entire gaming world. In addition, some games use part of the screen to show an automap, showing one's location. When one moves the player-character into a town, cave, or other significant feature marked on the map, the scene shifts to a view inside a smaller-scale plan view, which can depict non-player characters and enemies. Then, when one begins combat, a combat scene is presented.

These maps are usually set up so that North is always at the top, and often most features are laid out on a rectilinear grid. Hence, unlike in the real world, one cannot become lost through disorientation, especially by following a feature that one assumes to be rectangular but which gently curves. So the layout of these maps is often in the form of a concealed maze to make one's paths take longer and more involving. *Dragon Quest* began the trend (in Japanese games, at least) of having the player-character take extraordinarily roundabout paths to reach destinations, guided by a limited view of the world map. Dungeons are also usually in the form of a maze, but not as complex as a garden one. Many games require lamps to see in dungeons, and present a more restricted view to make it more like a maze. The reason why the layout is only somewhat maze-like is that movement is punctuated by many combats.

Combat sequencing

Most games are designed around a system of "random encounter", in which every few steps one's characters take on the screen signals the start of an engagement with minor enemies. By defeating these, one's characters gain "experience points" just as in a paper-and-pencil RPG. But if one considers one's characters too weak, one can choose to deliberately battle many more minor villains. The difference is that the gamesmaster of a PnPRPG would consider doing this a waste of time. Computer game players demand lots of different types of minor villains (e.g., griffins, octopuses, silver knights, funny thieves, rabbits), as they're battling these all the time - some games have 200 - and dislike palette-swapped foes, which look the same as a weaker enemy one fought several scenes back but are a different color, something which was done in the early CRPGs due to lack of computer memory space. Some games have many of these imposed combats made avoidable through not coming too close to an enemy shown on the screen.

What are called "chapters" of gameplay are marked by more powerful villains called "bosses", who take some skill to defeat. These may have had some foreshadowing in the story and the defeat of each may result in setting the party off on a subsidiary quest. There may be "side quests" which result either in more experience points or the getting of special weapons or magical items that wouldn't be necessary to win the game. The game usually ends with a battle with the major villain, the one whose defeat is the main storyline of the game. Often the player has already fought this villain several times during the game in various weaker conditions, and it often turns out that there is an even more powerful villain behind this one.

History

Role-playing video games began in 1975 as an offshoot of early university mainframe computer text RPGs on PDP-10 and Unix-based computers, starting with *Dungeon* and graphical RPGs on the PLATO System, pedit5 and dnd, themselves inspired by paper-and-pencil role-playing games. Other influences during this period were text adventures, *Multiple-User Dungeons* (MUDs) and *roguelike* games. Some of the first graphical CRPGs after pedit5 and dnd, were orthanc, avathar (later renamed avatar), oubliette, dungeons of degorath, baradur, emprise, bnd, sorcery, moria, and dndworld, all of which were developed and became widely popular on PLATO during the latter 1970s, in large part due to PLATO's speed, fast graphics, nationwide network of terminals, and large number of players with access to those terminals. These were followed by (but did not always lead directly to) games on other platforms, such as Akalabeth (1980) (which gave rise to the well-known Ultima series), and Wizardry.

These early *Ultima* and *Wizardry* games are perhaps the largest influence on the later console RPG games that are now popular. Many innovations of Ultima III: Exodus eventually became standards of almost all RPGs in both the console market (if somewhat simplified to fit the gamepad) and the PC market. Later Dungeon Master (1987) introduced realtime gameplay and several user-interface innovations, such as direct manipulation of objects and the environment with the mouse, to first-person CRPGs.

The earliest console RPG was the Intellivision title AD&D Treasure of Tarmin (1982). Much later, in 1986, Enix made the NES title Dragon Quest (video game) (called Dragon Warrior in North America and would remain that way until the 8th game in the series). This was followed shortly by ports of the computer RPGs Wizardry and Ultima III, and by Final Fantasy (1987) by Squaresoft. Both of these games proved popular and spawned a series of sequels. Both game series remain popular today, Final Fantasy more so in North America, and Dragon Quest in Japan.

Dragon Quest and *Final Fantasy* both borrowed heavily from *Ultima*. For example, leveling up and saving must be done by speaking to the king in Dragon Quest, and in order to rest and get healed, the characters must visit the king (Dragon Quest) or stay the night at an inn (both games). The games are played in a top-down perspective, much like the Ultima games, as well. The combat style in Dragon Quest was borrowed from another PC-based series, the Wizardry games.

Modern games

Fairly recently, more and more multiplayer CRPGs have appeared. For instance, Diablo (1996) features a system by which different players can enter the same world and cooperate against the enemies, trade equipment, or, should they wish, kill one another. Massively multiplayer online role-playing games (MMORPGs), huge open-ended worlds with hundreds of interacting characters, have also appeared, pioneered by games like Ragnarok Online, Ultima Online, EverQuest, and Asheron's Call.

An interesting entry into the CRPG world is *Pokémon* (a.k.a. *Pocket Monsters*), a fairly simplistic set of games whose main innovation is the replacement of the party by creatures that can be captured, collected, and trained for fighting. Its success has been phenomenal, leading to a huge industry with many spin-off products, including other games, cartoons, and endless merchandise.

In 1997, a new Internet fad began. Influenced by console RPGs, a large group of young programmers and aficionados began creating independent CRPG games, based mostly on the gameplay and style of the older SNES and Sega Genesis games. The majority of such games owe to simplistic software development kits such as the Japanese RPG Maker series. This started the independent RPG video games movement.

More recently, with the advent of games like Deus Ex and Warcraft III, the idea of what it means to be a RPG has become blurred. Many non-RPG games are increasingly featuring aspects traditionally seen in RPGs, such as a skill system, experience, and dilemmas. The expansion of traditional RPG elements into 3D game engines is creating a myriad of hybrid game categories, crowding successors to earlier representations of CRPGs.

The representation of RPG elements in first- and third-person shooters is indistinguishable from the game simply incorporating a story with cut-scenes and traditional FPS problem solving, and developments to the incorporation of the genre's usual character building (such as getting better weapons). As FPS develop and increase in these characteristics it remains to be seen whether the games will simply be called FPS (or TPS), break off into a new category of FPS/RPG, or just adopt the RPG name.

Cultural differences

Due to cultural differences between developing companies based on their country of origin, there are now two certain "families" of graphical RPGs. The differences are primarily focused on the graphics and storyline, but also on statistics systems, magic systems and the like. At the basic level, though, both are pretty much the same, with attributes, statistics and levels dominating gameplay, and characters and personalities dominating the storyline.

Japanese (and East Asian)

One of the families is the Japanese family of graphical RPGs with the Final Fantasy, Phantasy Star, Grandia and the Lunar series as clear examples. These games are often more colorful and brighter than their western counterparts, and include the Japanese inclination to use a very loose fantasy world, not always strongly based on actual folklore or medieval times (perhaps because of a lack of familiarity thereof), but with arguably more influence from Japanese comics (manga) and cartoons (anime). Science Fiction may also have an impact on these games. Fantasy/sci-fi "hybrid" games are also common (some examples include Star Ocean and Final Fantasy). The characters in these games are usually anime-style with personalities ranging from both extremes of the spectrum. The storyline often involves an epic and final battle between the forces of good and evil, with the player nearly always fighting for the forces of good. Some exceptions include Xenogears, where there is no defined "evil" force. Character races tend to be limited to humans or completely new, created races that look just like humans; in games that do include various races, these are usually limited to a selection of humans, beastmen/women, espers (i.e. ESPers, who look just like humans but have different powers), androids and, on rare occasions (such as *Tales of Symphonia*), elves and dwarves, etc. It is also rare or nonexistent to be able to actually choose your characters' races; you are typically given no choice. D&D-based systems among these games do not exist; instead, Japanese RPGs often create new, unrelated "systems" for each game, even for each game in a single series. Most games use a level-based advancement with little customization involved, with level 1 as the basic level of power in the game and level 99 as the top; but recent games tend to include some customization, like occupations that can be levelled as well. Level advancement in Japanese CRPGs is also more brisk than their American counterparts, often requiring fighting only a few monsters to advance to the next level in early parts of the games.

A minor family also exists in Taiwan and other Chinese-speaking areas. The mechanics (i.e. combat and job selection) of this Chinese family of graphical RPGs is largely the same as the Japanese one. Differences lie in the graphics and plot. Many of those games use Chinese-style graphics and the storyline is told with a wuxia style, inspired by novels. One famous exmple is Sword of Xuan Yuan.

American (and other Western)

The other family of graphical RPGs is the western (American) one, with Baldur's Gate, Diablo and Neverwinter Nights as good examples, but also including older games like the Gold Box series. These games are often darker, almost horror-like in design and art, and the characters featuring in these games are rendered or drawn in a more realistic way according to western styles, with armor, weapons, and so on being drawn based on actual counterparts in the Middle Ages. The personalities of the characters are more varied than those of their Japanese counterparts, without any real absolutes in morality. The storyline too is often darker, with the main theme being usually an ongoing struggle, almost never ending with a total victory over whatever enemy is given. The character races are diverse and the player is usually offered various races to choose from – often based on D&D rules – including dwarves, elves, gnomes, and halflings. These races, as well as other game characters, are based on the many characters that J. R. R. Tolkien wrote about, including dwarves, wizards, and dragons (hobbits typically being represented as the nearly identical halflings). These graphical RPGs often based their game systems on the various D&D systems used at the time, sometimes even displaying dice rolls, but it is not uncommon for completely different systems to be borrowed or created for use as well. Level advancement in Western RPGs is typically very slow, and often includes rather low level (or experience point) limits, which in some games can be as low as level 6-8, unheard of in the Japanese game market.

Comparison

A large difference between American RPGs and Japanese RPGs is the way the stories are structured. Western style RPGs are generally less linear and thus allow more freedom. Japanese style RPGs are usually more linear, and the player choices usually have little to no effect on the outcome of the plot. However, it could also be said that a linear storyline allows for a tighter and more complex story, much like watching an interactive movie, than does a completely open-ended structure. A good counter-example – a Japanese style RPG with fairly open and non-linear storyline – is *Romancing SaGa*, a far more open Japanese CRPG famous for its non-linearity in Japan.

Shared characteristics

The following are universal staples applicable to many CRPGs of both cultures in general.

- Death is almost always the final solution employed by the protagonists to prevent the antagonist from achieving his or her goals, often after reason fails.
- In several cases, but not all, the lead protagonist is silent, sometimes so the player controlling them (who will likely get to name the character at the beginning) can have a greater sense of presence in the role.
- While female characters in fighting games and certain other types are notorious for being faster than the males but less powerful, women in RPGs regularly have the potential to

become just as capable at offense as their counterparts. That being said, the female healer is a stereotype in Japanese CRPGs, less so in Western CRPGs where there is more character creation.

- The plot often is structured around the ancient Western theory of the four elements: Air, Fire, Water, and Earth. Spells, objects, weapons, and monsters of these elements exist to be found or defeated, and elemental relations (fire is weak to water and ice weak to fire) are often preserved. Because it seems a simple extension, other non-traditional "elements" like electricity or light may be added as well in Japanese CRPGs; Western CRPGs may use para-elements (ice, ooze, magma, smoke) and quasi-elements (lightning, radiance, minerals, steam, vacuum, ash, dust, salt) as defined by Dungeons & Dragons instead. In contrast, the Chinese "elements" of Wood, Fire, Earth, Metal, and Water are not often seen in CRPGs, while the "elements" corresponding to the Bagua (concept) (Heaven, Earth, Fire, Water, Wind, Mountain, Lightning, Marsh) are almost never used at all. (See the respective articles for more information on elements.)
- Related to the use of elements, there is a variety of status effects that can enter the battle. Status effects give extra ability to a player (charge energy, extra defense, reflect projectiles, absorb and heal) while others hinder opponents (frozen in ice, frozen in time, poisoned, on fire, dizzy, sleepy, shocked, shrunk, confused, paralyzed).
- Usually two lead characters of opposite sex who are seen interacting early on will end up romantically involved, or implied to be so in the future. The first game to make the characters fall in love or drift apart based on the play style of the user was *Treasures of the Savage Frontier* (1992).
- Direct continuations in CRPG games are rare. Most sequels to CRPGs either have nothing to do with the previous game or take place within 5-1,000 years after the events of the previous entry took place. Many RPGs take place in the same country or world, have similar places, events in history, recurring characters (Like Cid in Final Fantasy), weapons, or magic. Some people say CRPGs are like this to avoid stretching out the plot too much.

Relationship to pen-and-paper RPGs

CRPGs are sometimes frowned upon by pen-and-paper (PnP) players. Game designer Sandy Petersen has said that the worst PnP

RPG session he had ever seen was still better than the best computer RPG play experience [1]. There are several reasons for this view, such as CRPGs' tendency to emphasise building a powerful character over creating a character's history and motivations. Many PnP players consider this trend to be powergaming, as opposed to actually "role-playing."

Perhaps more importantly, however, it has been argued that it is inaccurate to use the term "role-playing game" to describe games that feature character building but in which the player cannot actually make any meaningful decisions, ie. act "in character" and significantly influence both the character's personal and the game's overall progress. In games like these the character is just making tactical decisions and not necessairly role-playing.

This is a similar common criticisim of simulated realities in general. A virtual world can create incredible feelings of freedom of choice and motion, but players in even the most free-form CRPG must, of necessity, play within the rigidly defined world created by the game's authors. PnP games, similar to real life, have no such pre-defined limitations. While PnP games do have rules, players may question and reinterpret them in ways CRPGs may never be able to emulate.

Many games that are advertised to have "RPG elements" are entirely linear and offer no more role-playing opportunities than reading a book or watching a movie, but it should be noted that this certainly isn't true for all CRPGs on the market. While obvious technical and practical limitations ensure that CRPGs cannot be as open-ended and free as PnP games, where the only real limitation to the events that unfold is the participants' imagination, it is also worth noting that numerous games allow for considerable variation in their content delivery. This variation depends on the player's decisions and the character's personality. Also, many of these games' graphic engines make them easily moded by fans of the games, who with their own variations and ideas, can build their own homegrown campaigns, adding new or modified heroes, quests, items, and portraits.

Variant terminology

Because paper-and-pencil RPGs came first in the US, it was the computer RPGs that were given the abbreviation CRPG. In Japan, however, the computerized ones first gained popularity, so RPG (in the Latin alphabet) is used for them alone, while the paper-and-pencil versions have been cited under the retronym PRPG.

Occasionally a distinction is made between console RPGs and those played on the personal computer, which can have more game saves and employ more command keys, but which do not have as high a resale value. The abbreviation CRPG is unfortunately sometimes used to refer solely to the console games, leaving RPG for games for the Personal Computer or Apple by those who do not play the paper-and-pencil sort.

Those games which during the attack phase involve the movement of characters on a grid to get best striking distance from the opponent and to flee when wounded, namely, tactical RPGs, get the abbreviation TRPG. Due to the relative rarity of the word "tactical", and the prestige of the word "strategic", these are also mistakenly termed SRPGs.

Chronology of CRPGs

Note: These are not complete lists of all computer or console RPGs, but a list of some of the most significant, influential or well-regarded CRPGs of all time. A number of titles which were initially released for Windows were later ported to the Macintosh or to console platforms. Likewise, a number of console-specific RPGs were later ported to other consoles or to the PC.

Chronology of computer RPGs

1974: dnd (PLATO System)
1975: Dungeon (PDP-10)
1980: Akalabeth
Rogue (UNIX, ported to many other OSes later)
Tunnels and Trolls
1981: The Ultima series debuts (Apple II)
Wizardry (Apple II)
1982: Tunnels of Doom (TI99/4A)
1983: Ultima III is released, pioneering many innovations that would become standard on many CRPGs that followed (DOS, Apple II, Atari ST, Commodore Amiga, Commodore 64, Macintosh)
Moria
Questron
1985: Bard's Tale (Apple II, later Commodore 64, Amiga, Apple IIgs, Atari 8-bit family, DOS, Macintosh)
Alternate Reality
Phantasie series debuts (Apple II, Atari ST, Commodore 64, DOS)
1986: Starflight (Apple II, Atari ST, Amiga, DOS, Macintosh)
1987: Might and Magic series debuts (DOS, Commodore 64,

Macintosh)
Wasteland (Apple II, Commodore 64, DOS)
Dungeon Master (DOS, Atari ST, Amiga)
1988: Pool of Radiance, first game in the Gold Box series, uses AD&D rules and Forgotten Realms campaign world
1989: Starflight 2 (DOS)
1990: Angband
Champions of Krynn, Gold Box series, uses Dragonlance campaign world
Ultima VI (DOS)
Eye of the Beholder (DOS, Amiga, Sega CD, Super Nintendo)
1991: Neverwinter Nights, the first graphical MMORPG debuts; ran on AOL 1991-1997.
Gateway to the Savage Frontier Gold Box D&D RPG
Eye of the Beholder II: The Legend of Darkmoon
1992: Ultima Underworld (DOS, a PlayStation version was released in 1997)
Ultima Underworld II (DOS)
Treasures of the Savage Frontier Gold Box D&D RPG, perhaps the first game where an NPC can fall in love with a player character if their conduct earns it
1993: Forgotten Realms Unlimited Adventures (DOS, Macintosh)
Lands of Lore series debuts (DOS)
Eye of the Beholder III: Assault on Myth Drannor
Dungeon Hack (DOS)
1994: The Elder Scrolls: Arena series debuts (DOS)
System Shock (DOS)
1996: The Elder Scrolls II: Daggerfall (DOS)
Diablo series debuts (Windows, Macintosh)
Albion (game) (DOS)
1997: Fallout series debuts (Windows, Macintosh)
Ultima Online (Windows)
1998: Baldur's Gate series debuts (Windows, Macintosh)
1999: Planescape: Torment (Windows)
EverQuest (Windows, Macintosh)
Septerra Core (Windows)
System Shock 2 (Windows)
2000: Icewind Dale (Windows, Macintosh)
2001: Arcanum: Of Steamworks and Magic Obscura (Windows)
Gothic (Windows)
RuneScape (Java)
Anachronox (Windows)
2002: Dungeon Siege (Windows, Macintosh)
Icewind Dale II released, uses D&D 3rd edition rules (Windows)

Neverwinter Nights (Windows, Macintosh, Linux version in 2003)
The Elder Scrolls III: Morrowind (Windows)
2003: Star Wars: Knights of the Old Republic (Windows, Macintosh)
Freedom Force (Windows, Macintosh)
The Temple of Elemental Evil released, uses D&D 3.5 rules, Greyhawk campaign world (Windows)
2004: City of Heroes (Windows)
EverQuest II (Windows)
Star Wars: Knights of the Old Republic II (Windows, Macintosh)
World of Warcraft (Macintosh, Windows)
Vampire: The Masquerade - Bloodlines (Windows)
2005: The Matrix Online
Dungeon Siege II (Windows)
Guild Wars (Windows)
Fable: The Lost Chapters (Windows)

Chronology of console RPGs

1982: AD&D Treasure of Tarmin (Intellivision (INT)), Dragonstomper (Atari 2600 (ATR))
1986: Dragon Quest (Dragon Warrior) series debuts (Nintendo Entertainment System (NES))
1987: Digital Devil Story: Megami Tensei (NES), Final Fantasy series debuts (NES), Phantasy Star (Sega Master System (SMS))
1988: Ys (SMS)
1989: River City Ransom (NES), Mother (NES)
1990: Crystalis (NES),
1991: Lagrange Point (NES)
1992: Final Fantasy V (SNES)
1993: Secret of Mana (Super Nintendo Entertainment System (SNES))
1994: Mother 2 (EarthBound), Final Fantasy VI(III in North America) (SNES)
1995: Suikoden (PlayStation (PS1)), Terranigma (SNES), Chrono Trigger (SNES), Tales of Phantasia (SNES)
1996: Super Mario RPG (SNES), Rudora no Hihou (SNES)
1997: Final Fantasy VII (PS1), Grandia (Sega Saturn (SAT))
1998: Suikoden II (PS1), Xenogears (PS1), Parasite Eve, Brave Fencer Musashi (PS1)
1999: Final Fantasy VIII, Chrono Cross (PS1)
2000: Eternal Arcadia (Skies Of Arcadia) (Sega Dreamcast (DC)), Dragon Quest VII (PS1), Vagrant Story (PS1)
2001: Final Fantasy X (PlayStation 2 (PS2)), Baldur's Gate: Dark Alliance (PS2)
2002: Suikoden III (PS2), Xenosaga Episode I: Der Wille zur Macht

(PS2), Kingdom Hearts (PS2), Lost Kingdoms (GCN)
2003: Star Wars: Knights of the Old Republic (Xbox (XBOX))
2004: Suikoden IV (PS2), Tales of Symphonia (Nintendo GameCube (GCN), The Lord of The Rings: The Third Age (PS2/XBOX/GCN)
2005: Suikoden Tactics (PS2), Xenosaga Episode II: Jenseits von Gut und Böse (PS2), Jade Empire (Xbox) ,Kingdom Hearts II (PS2)

List of companies

Activision
Akella
Atlus
Bethesda Softworks
BioWare
Black Isle Studios
Blizzard North
Camelot
Capcom
Enix
FTL Games
Funcom
Game Arts
Gas Powered Games
Konami
Interplay
Looking Glass Studios
Namco
New World Computing
Nintendo
Nippon Ichi Software
Obsidian Entertainment
Origin Systems
Piranha Bytes
Sir-Tech
Spiderweb Software
Square Enix (a result of the business merger of Enix and Square Co., Ltd.)
Square
Stormfront Studios
Strategic Simulations, Inc.
tri-Ace
Troika Games
Westwood Studios

Related genres

- Adventure games
- MMORPGs
- MUDs
- Real-time strategy
- Roguelike

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Shooter Games

Shooter games cover a fairly broad spectrum of sub-genres that have the commonality of controlling a character who is usually armed with a firearm that can be freely aimed.

There are many criteria to determine the type of shooter, listed below are some of the major divisions. Using the following, it is possible to categorize almost all shooters developed.

Perspective

The player usually views the events from behind the eyes of the character (a first-person shooter) or from a camera that follows the character, usually a few feet behind (a third-person shooter). It is also possible, though infrequently used in this genre, for a game to have a fixed camera.

Realism

Games that attempt to emulate life-like ballistics and character damage are called tactical shooters. Those that use a more lenient model of physics are generally referred to as arcade shooters. This is a continuous division as most games simply tend to lean one way or another.

Number of characters

While most shooters are played as **Solo** ventures, several offer the players the opportunity to control a **Squad** of characters, usually directly controlling one and giving orders to computer controlled allies. Games which feature Non-player characters that fight on your characters side but aren't directly controllable or appear infrequently are not considered Squad games.

Focus

This is often an optional way to categorize a shooter, but in some cases it's needed to help distinguish it. A game may quite often heavily rely on stealth as opposed to direct action. Others might have large horror elements to them.

Shoot 'em up

Shoot 'em ups are a very specific sub-genre of shooters, wherein the player has limited control over their movement; if done with 2D gameplay, an example being Ikaruga, this means that a moving background continually pushes the player forward, though they may move up and down and left and right around the screen, typically firing straight forward. Types include fixed shooters, scrolling shooters, tube shooters, and multidirectional shooters.

Rail Shooter

The term rail shooter traditionally describes games where the player cannot control their own movement, the gameplay being limited to aiming from a third or first-person perspective. Many light gun games fall into the rail shooter genre, where a player is taken along a set path as targets appear. On occasion, a game mode similar to a rail shooter may appear in a game of a different genre.

In some 3D shooters, such as Starfox and Omega Boost, the player travels forward within a square "tube", and may move throughout the 2D plane perpendicular to the player's movement. Although often called rail shooters, these games have more in common with scrolling shooters. Players face given less enemies than in their 2D counterparts, as the added dimension complicates aiming and dodging.

Run-and-Gun Shooter

A run-and-gun shooter is a combination platform game and scrolling shooter, this type of game involves a character running along a plane while shooting enemies in multiple directions, as in games like Contra and Metal Slug.

Light-gun games

Light gun games use a pointing device for computers and a control device for arcade and video games. The first light guns appeared in the 1930s, following the development of light-sensing vacuum tubes. It wasn't long before the technology began appearing in arcade shooting games, beginning with the Seeburg Ray-O-Lite in 1936. These early light gun games used small targets (usually moving) onto which a light-sensing tube was mounted; the player used a gun (usually a rifle) that emitted a beam of light when the trigger was pulled. If the beam struck the target, a "hit" was scored. Modern screen-based light guns work on the opposite principle -- the sensor is built into the gun itself, and the on-screen target(s) emit light rather than the gun. The first light gun of this type was used on the MIT Whirlwind computer. Like rail shooters, movement is typically limited in light-gun games.

Notable games of this category include the Virtua Cop, the Time Crisis series and House of the Dead series, along with Duck Hunt for the NES.

Hybrid

Additionally, shooters can quite easily be combined with other major game genres, most often role-playing or strategy.

Multiplayer

If a game is available online, there are several other sharp divisions it can take. **Team** games are where players are assigned to one of two (sometimes more, but very infrequently) factions which are competing for some goal. **Co-Op** games have several players on the same faction playing through either the single player or custom missions. **Individual** has all players competing with each other. Many times a game will offer differing modes which allow players to choose from among these various types.

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Browser Games

Browser games are games that are played online via the Internet. They are distinct from normal video and computer games in that they do not require any client side software to be installed. Most rely solely on client-side technologies such as a web browser and occasionally common plugins such as Flash. A game played in a browser is often called a **browser-based game**.

Plugins Used

There are many different plugins used to play online games. Some of these include Java virtual machine, Shockwave and Flash. Most modern day browsers contain these plugins in the default installation. The game created using these technologies rely heavily on the client's browser to download and utilize the game's code on the client side. Due to this fact, it allows users to more easily hack the code on their end, denying fair multiplayer gameplay, therefore a large majority of plugin based games today are still single player. The upside to this is that since the client does most of the processing, the server does not recieve a heavy bandwidth load of requests.

Server-Side Games

A growing number of games are being created using Server-side_scripting. The most common of the language's being used is PHP due to it's large community support and low learning curve. Games such as this store all code server side and only send the user's browser HTML markup language for interpretation. Some include JavaScript or AJAX to allow the user to see immediate responses to their online actions and make the games more visaully appealing in the same manner as plugin based games. Having all game code server side allows for a more secure setting as the player does not have direct access to it, making harder to alter the code and cheat.

See also

- List of browser games
- Online skill-based game
- Massive multiplayer online role-playing games (MMORPG)

- Massively multiplayer online real-time strategy (MMORTS)

Home | Up | List of Browser Games

List of Browser Games

This is a **list of browser based games** (Browser games).

- *Type* - RPG or Strategy
- *First public release date* - First release date for public usage, not closed
- *Cost* - Whatever the basic package is, donations plans constitute cost
- *Turn/Realtime* - If the game has any type of energy point system or you have to wait for turns to build up, it's turn based, full freeform movement unrestricted is realtime

	Developer / Author	First public release date	Type	Cost / Cost per month (USD)	Turn/Tick Time or Realtime
BattleMaster	Tom Vogt	2000	Strategy	Free	Turn
Colony-Wars	Sean Brown	2004	Strategy	Free	Tick Time
Crimson Warfare	Mofunzone	January 20, 2004	Strategy	Free	Realtime
Kingdom of Loathing	Asymmetric Publications	June 9, 2005	RPG	Free	Turn
Merchant Empires	Bryan Burton	2001	Strategy	Free	Turn
Pardus	Impressum	?	Strategy	Free	Turn
Planetarion	?	February 1, 2000	Strategy	Free	Turn
Runescape	Jagex	January 1, 2001	RPG	$7.95/ month	Realtime
The Five Pillars	Olav Bringedal	December, 2002	RPG	Free	Turn
The Reincarnation	MARI	?	Strategy	Free	Turn
Urban Dead	Kevan Davis	July 2005	RPG	Free	Turn

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Real-time Strategy

A **real-time strategy** (**RTS**) game is a type of computer strategy game which does not have "turns" like conventional turn-based strategy video or board games. Rather, game time progresses in "real time": that is, it is continuous rather than turn-by-turn. (The word "strategy" originally referred to warplan at the level of armies and squadrons instead of giving order for individual units or persons).

Brief History

The first RTS game was the 1983 Stonkers by Imagine Software for the ZX Spectrum. [1] But the game that first exemplified the genre was the 1990 Battle Master for the Amiga and Atari ST.

The precursor of modern RTS games was The Ancient Art of War by Dave Murry and Barry Murry of Evryware (published by Brøderbund) in 1984, followed by The Ancient Art of War at Sea in 1987.

Other RTS games from the 1980s include Rescue Raiders for the Apple 2 in 1984, Nether Earth for ZX Spectrum in 1987, and Herzog Zwei for the Sega Genesis in 1989. However, the genre was defined by Dune II (1992), which at once introduced the core concepts of RTS games: resource-gathering, base-building, technology development and direct unit control.

The success of *Dune 2* encouraged the development of such games as Stronghold (1993), Warcraft (1994), Command & Conquer (1995), War Wind (1996), Dark Reign (1997), Total Annihilation (1997), Age of Empires (1997), StarCraft (1998), Warzone 2100 (1998), Empire Earth (2001), Empires: Dawn of the Modern World (2003) and Rise of Nations (2003). In fact, the designers of Dune 2 traced its spiritual lineage back to the real-time simulation SimCity (1989) and their previous game Battletech: The Crescent Hawk's Revenge (1988), a real-time wargame without base-building elements.

Gameplay

Because of the generally faster-paced nature (and in some cases a smaller learning curve), RTS games have surpassed the popularity of conventional turn-based strategy computer games. In the past some traditional strategy gamers regarded RTS games as "cheap imitations" of turn-based games, arguing that RTS games had a tendency to devolve into "clickfests", in which the player who was faster with the mouse generally won, because they could give orders to their units at a faster rate. Real-time strategy enthusiasts counter that micromanagement involves not just fast clicking but also the ability to make sound tactical decisions under time pressure. It is noteworthy, however, that due to the games being shorter because of the faster pace of the game and absence of turn switching pauses, RTS games are far more suitable for Internet play than turn-based games; this is indubitably an important reason for their popularity. Furthermore, turn-based games are often more taxing on the attention of casual gamers, as each game generally takes much longer to play.

The more recent generations of RTS games usually have features which reduce the importance of fast mousework, enabling the player to focus more on overall strategy. For example, queuing allows the player to put in an order for multiple units at a single building instead of requiring the player to return to that building to order the next unit built whenever a unit ordered earlier is completed. The ability to set waypoints allows the player to give multiple movement commands to a unit at once. Most games also give each unit strengths and weaknesses, discouraging players from easily defeating an opponent with simple "rush" tactics or "swarm" tactics in favour of more balanced armies.

Generally, most RTS games follow the same pattern:

1. Build up your base and forces (your economy).
2. Acquire more resources.
3. Attack the enemy, attempting to deprive him of resources and destroy his infrastructure.

However, some games do not allow the player to create new units, or build bases. Some of these games include Myth and Ground Control. These games are purely tactical, forcing the player to play only with the units he or she is given. You could even further define these types of games as RTT (note real time tactical games are NOT real time strategy games), "real-time tactical games".

Most RTS games also feature single-player campaigns -- a series of missions where a human player plays against the computer with a defined scenario and objectives, usually within the context of a background story. Often each mission has a different style of play, sometimes dramatically so. It has become something like to a tradition for single-player campaigns to include at least one mission with no base construction or resource-gathering; typically at the start of these missions the player is given a number of combat units, occasionally with a "hero" unit. These units must be used to complete the mission in a level which is usually mazelike; often additional units can be gained as reinforcements or rescued as the mission progresses. These missions eliminate the resource-gathering, or "macromanagement", as it's called, and focus solely on micromanagement.

Of the games that *do* allow the player to build up a base and an army, they seem to be diverging into at least two main camps: micro-management and macro-management.

Micro-management games

Micro-management games allow an army and base to be built, but they limit the size of the army (sometimes, rather severely). The purpose of this is to create more of a tactical atmosphere, and to prevent one side from simply cranking out units and throwing them at the enemy until he collapses.

By limiting the size of the army, the game requires the player to intelligently utilize his "partially" limited troops. This is more similar to the purely tactical *Myth*-style games. Good examples of this type of game is Warcraft III, where further units require more upkeep, and Battle Realms, allows only a maximum of 40 units. To simplify the control, however, the player can combine individual units into groups. This is even more found in the game ArenaWars, where every player only has 1000 credits to build units. If the unit dies the credits are refunded.

Macro-management games

On the other end are the **macro-management games**. These games have more of a focus on economic production and large-scale strategic maneuvering, and include games such as Empire Earth, Total Annihilation, and Supreme Commander.

Others

Some games, especially on the video game consoles, use RTS merely as a vehicle to tell the story. For example, in the PlayStation 2 game *Kessen* (2000) the player has a limited control over the units, as the game unfolds historical battles with a heavy use of cutscenes.

Massively multiplayer online real-time strategy (MMORTS) games combine aspects of massively multiplayer with real-time strategy.

Graphics

As the category grew, some RTS games, most notably Stronghold (1993), Myth (1997, which pioneered the use of 3D in real-time wargames, but was arguably not a true RTS), Homeworld and Warzone 2100 (both 1999), have attempted to break away from the 2D board-like view of Dune 2 and original Warcraft to richer 3D environments. These games are played on a 3D battlefield. In the case of Homeworld, the game is set in space, offering a true 3D environment in which players are required to think three-dimensionally, as all units can move vertically as well as on a flat plane as was standard for RTS games of the time. Stronghold, and many future games including subsequent Command and Conquer titles, began to use isometric 3D graphics, and in later years these games began to use true 3D graphics, making it possible to rotate the view of the battlefield smoothly, instead of in 90 degree intervals as per Stronghold. These effects became even more visually detailed in later games, such as Warcraft III, Empire Earth, and Command & Conquer: Generals. A notable recent RTS game for breaking away from the trend is Phenomic's Spellforce - The Order Of Dawn, which incorporates the choice of a third person view of the main hero for you to control.

As companies are striving to come close to cinematic level of visual quality, the improvements in graphics accelerate. In 2004 two landmark games were released: Rome: Total War from Creative Assembly and The Lord of the Rings: The Battle for Middle-earth from Electronic Arts.

Another two notable games were released in 2005: Act of War: Direct Action and Age of Empires III. Both games featured realistic physics (Age of Empires III uses the Havok physics engine), realistically destructible buildings and ever more stunning graphics. In addition Act of War boasts a well developed techno-thriller story by Dale Brown told via machinima and live action cinematics.

Future games

Future games are likely to further enhance the realism of RTS games, giving each unit a limited intelligence, similar to how it's done in MASSIVE (and to some extent in The Lord of the Rings: The Battle for Middle-earth) and generating unit animations procedurally (currently all games use recorded animations done with motion capture or manually), similar to how it's done in NaturalMotion's endorphin software.

Some future releases:

The Lord of the Rings: The Battle for Middle-earth II
Rise of Nations: Rise of Legends
Star Wars: Empire at War
Supreme Commander
Command & Conquer: Tiberian Twilight

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MUDs

In computer gaming, a **MUD** (multi-user dungeon, dimension, or sometimes domain) is a multi-player computer game that combines elements of role-playing games, hack and slash style computer games, and social instant messaging chat rooms. Typically running on a bulletin board system or Internet server, the game is usually text driven, where players read descriptions of rooms, objects, events, other characters, and computer-controlled creatures or non-player characters (NPCs) in a virtual world. They may interact with each other and the surroundings by typing commands that resemble a natural language, usually English.

Traditional MUDs implement a fantasy world populated by elves, goblins, and other mythical beings with players being able to take on any number of classes, including warriors, mages, priests, thieves, druids, etc. The object of the game is to slay monsters, explore a world rich in fantasy and with adventure, and to complete quests. MUDs are typically fashioned around the dice rolling rules of the Dungeons & Dragons (D&D) series of games.

MUDs typically have a fantasy setting, while others are set in science fiction-based universe. Still others, especially those which are based on MOOs, are used in distance education or to allow for virtual conferences. MUDs have also attracted the interest of academic scholars from many fields, including communications, sociology, law, and synthetic economies.

Most MUDs are run as hobbies and are free to players; some may accept donations or allow players to "purchase" in-game items.

History

The first games we might today call MUDs appeared in 1977 on the PLATO system. In Europe at around the same time, MUD development was centered around academic networks, particularly at the University of Essex where they were played by many people, both internal and external to the University. In this context, it has been said that MUD stands for "Multi-Undergrad Destroyer" due to their popularity among college students and the amount of time devoted to the MUD by the student. The popularity of MUDs of the Essex University tradition escalated in the USA during the 1980s, when (relatively speaking) cheap, home personal computers with 300 to 2400 baud modems enabled role players to log into multi-line BBSes and Online_service providers such as Compuserve.

The very first MUD was perhaps Oubliette, written by Jim Schwaiger, and published on the PLATO system in 1977. It was so difficult that one could not play it alone: in order for players to survive, they had to run in groups. Following it, also on PLATO, was a game called 'Moria' written in 1977, copyright 1978. Again, players could run in parties but in this MUD it was also possible to effectively play while only running one character. There is some dispute as to whether Oubliette or Moria actually count as MUDs, as their degree of persistence was minuscule and their inter-player communication somewhat impoverished. They were graphical in nature and very advanced for their time, but because of this were unable to spread beyond PLATO. Textual worlds were far more portable, which explains their central role in the development of Virtual_Worlds compared to the niche position held by the PLATO games,

Early MUDs from England were created in 1978 by Roy Trubshaw and Richard Bartle at Essex University on a DEC PDP-10 in the UK [1]. They chose the acronym MUD to stand for Multi-User Dungeon, in reference to another PDP-10 game called Dungeon (or DUNGEN due to the six character filename limit), which was later commercially released by Infocom under the original development code name Zork. Zork in turn was inspired by an older text-adventure game known as Colossal Cave Adventure or ADVENT. The classic game MIST (also part of Essex University MUD) which could be played from any computer connected to JANET (a European academic network predating the internet), became one of the first of its kind to attain broad popularity.

Another early MUD was Avatar, written in 1979 by Bruce Maggs and Andrew Shapira, both high school students using the PLATO system at the University of Illinois. This MUD was 2.5-D game running on 512x512 plasma panels of the PLATO system, and groups of up to 15 players could enter the dungeon simultaneously and fight monsters as a team.

In the early 1980s Alan E. Klietz wrote a game called Milieu using Multi-Pascal on a CDC Cyber, which was used by high school students in Minnesota for educational purposes. Klietz ported Milieu to an IBM

XT in 1983, naming the new port "Scepter of Goth" (also spelled "Sceptre of Goth"). Goth supported 10 to 16 simultaneous users, typically connecting in by modem. Scepter of Goth was one of the first commercial MUDs, as franchises were sold to a number of locations. Scepter (as well as unfinished advanced MUD by Klietz called ScreenPlay) was first owned and run by GamBit (of Minneapolis, Minnesota), founded by Bob Alberti. GamBit's assets, including Scepter and ScreenPlay, were then sold to InterPlay (of Fairfax, Virginia). InterPlay eventually went bankrupt, making Scepter no longer available. In 1984, Mark Peterson wrote "The Realm of Angmar", beginning as a clone of Sceptre of Goth.

A version of MUD is still running at www.british-legends.com and versions of its descendant MUD2 run at www.mud2.com and www.mudii.co.uk. Two versions of Avatar, one from ~1979 and one from 1984, are still running at www.cyber1.org. Moria and Oubliette are also available.

These text-adventure games (both single and multi-player) drew inspiration from the paper-and-pencil based role-playing games (RPGs) such as Dungeons & Dragons which were approaching their peak popularity at this time, especially with the release of Advanced Dungeons & Dragons (AD&D) in 1977.

This strong bond between RPGs and MUDs continued through the years with the release of dozens of AD&D modules and series of related books and stories (i.e. Forgotten Realms and Dragonlance). Influences also came from the gamebooks such as Fighting Fantasy, Choose Your Own Adventure and Lone Wolf, and also other RPGs such as Vampire: The Masquerade, and Middle-earth Role Playing (or *MERP*).

Other MUDs that appeared around 1985 included Mirrorworld, run by Pip Cordrey and developed and written by Tim Rogers, Lorenzo Wood and Nathaniel Billington, and SHADES. SHADES was a commercial MUD accessible in the UK via the Prestel system. Mirrorworld was the first MUD to feature rolling resets.

Another popular MUD was AberMUD written in 1988 by Alan Cox, also known as Anarchy, named after the University of Wales Aberystwyth. Avalon, the Legend Lives, started in 1989, was the first MUD to combine a consistent fantasy story-line with a commercial venture.

In 1989, TinyMUD introduced the ability for the players to easily participate in creating the online environment, as well as playing in it. The TinyMUD code spawned a number of descendants, including TinyMUCK and TinyMUSH, which added more sophisticated programmability. (MUCK versions 2 and higher contain a full programming language named MUF, or Multi-User Forth, while MUSH greatly expanded the variety of commands and functions available and allowed them to apply to all objects.) Some use the term "MU*" to refer to TinyMUD, MUCK, MUSH, MUSE, MUX, and their kin; others simply allow the term "MUD" to apply universally. "MUVE" is a recent coinage, intended to stand for Multi-User Virtual Environment. UberMUD, UnterMUD, and MOO are some other MUD servers that were at least partially inspired by TinyMUD but are not direct descendants.

Also in 1989, and inspired by TinyMUD and AberMUD, LPMud was developed as a more game-oriented MUD that allowed participants to program the behavior of its "monsters."

In 1991, the release of DikuMUD, which was inspired by AberMUD, lead to a virtual explosion of hack-n-slash MUDs based upon its code. DikuMUD inspired several derivative code bases as well, including CircleMUD, Merc, ROM, NiMUD and SMAUG.

In 1994 Peterson had again rewritten his game to be compatible with MS-DOS (the basis for many dial-in BBS systems), and renamed it Swords of Chaos. For a few years this was a very popular form of MUD, hosted on a number of BBS systems, until widespread Internet access eliminated most BBSs.

Though seeing some decline in the past few years due to the advent of graphical MUDs (MMORPGs)and other networked games, the MUD scene is still very much alive on the Internet, and can be accessed via standard telnet clients, or specialized MUD clients that give a more pleasant user experience. Anyone wanting to play these games online can find them listed at various web portals such as the ones in the external links section of this article.

Variations on MUDs

Graphical MUDs

A **graphical MUD** is a MUD that uses computer graphics to represent parts of the virtual world and its visitors. The foremost of these is Habitat, written by Randy Farmer and Chip Morningstar for Lucasfilm in 1985. Graphical MUDs require players to download a special client and the game's artwork. They range from simply enhancing the user interface to simulating 3D worlds with visual spatial relationships and customized avatar appearances.

After the increase in computing power and Internet connectivity during the late nineties graphical MUDs became better known as MMORPGs (**m**assively **m**ultiplayer **o**nline **r**ole-**p**laying **g**ames). Unlike earlier MUDs, most MMORPGs are commercial ventures. See list of

MMORPGs for examples of this type of game.

Talkers and spods

A lesser known variant is the talker, typically based on ew-too or NUTS, with plenty of derived code bases. The early talkers were essentially MUDs, with most of the complex bits of code stripped away, leaving just the communication level commands -- hence the name talker. People who use these tend to be called spods.

The spod tends to be something of a long-term fanatic. Where many mudders may move on after a year or two, people who use talkers typically have been doing so for a decade or more. Talkers are significantly easier to run than an average MUD, since they don't incorporate very much artificial intelligence, and they are usually much more user friendly, since there is not often much fighting as a focus. In other words, whole families of husbands, wives, children, and siblings have been known to spod in certain circles.

They also use very little network traffic, and use simple protocols, making them ideal for setting up quietly at work. Talker applications predate MUDs by many years, although some of the early ones were used to play Dungeons & Dragons over computer networks. Talkers and some other MUDs use InterMUD to chat with users on completely separate MUDs.

RPIMUDs

A lesser known type of MUDs are RPIMUDs, Role-Play Intensive Multi-User Dungeons. RPIMUDs gear toward realistic enforced roleplay which is often blended in with fantasy themes. In general, the objective of the game is not goal based hack-and-slash, but to collaborate with fellow players to create complex and multi-layered storylines in a cohesive gameworld.

The majority of RPIMUDs are levelless and classless, focusing instead on skills, crafts, as well as role-playing against the world or environment, often going as far as to request their players to engage in role-play with inanimate creatures and objects. Such dedication to role-playing, in addition to creating a vivid experience for other players, is often rewarded by staff members who invisibly monitor the game.

Out-of-character communications are mostly restricted if present at all. This contrasts with other forms of mud role-playing styles such as storytelling and freestyle mushes in which role-play is conducted between players and OOC communications are more important.

Complex Combat MUDs

The term Complex Combat MUDs covers a wide variety of games. Generally, it means that a game does not have an automated 'kill' system - rather, there is a system of balances which require user input. When coupled with an 'affliction' or 'stancing' system or some sort of tactical fighting mechanism, this is a very engaging and exciting way of doing combat. Avalon is said to be the first MUD to implement such a system, but this has been taken up by many other games since.

Another distinguishing factor of Complex Combat MUDs is that they sometimes allow client-side triggers and scripting (often considered an unfair advantage in other games), since the 'balance' system ensures that writing a script to handle fighting would be extremely difficult, but some more basic scripts make fighting more exciting for both participants, and add an extra dimension to combat.

See also

- MMORPG – Massive Multiplayer Online RPG

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MMOGs

A **massively multiplayer online game** (**MMOG** or **MMO**) is a type of computer game that enables hundreds or thousands of players to simultaneously interact in a game world that they are connected to via the Internet. Typically the kind of game is played in an online, multiplayer-only persistent world. Some MMO games are played on mobile devices (Such as a phone) and are thus Mobile MMO games or MMMO games, or even 3MO games.

MMO's enable players to compete with and against each other and take gaming to a whole new dimension. The friendships made on MMO's are sometimes as real as those in the real world, and generate a large amount of online 'social capital'. However most MMO's require players to invest large amounts of their time into the game and are most suitable for the more serious gamer. However, almost anyone who enjoys video games can enjoy an MMOG.

Overview and history

The most popular type of MMOG, and the sub-genre that did much to pioneer the category, is the massively multiplayer online role-playing game (MMORPG). MMORPG's descend from university mainframe computer MUD and adventure games such as Rogue on the PLATO System and Dungeon on the PDP-10 that pre-date the commercial games industry.

The first graphical MMOG, and a major milestone in the creation of the genre, is the multi-player flight combat simulation game Air Warrior by Kesmai on the GEnie online service, which first appeared in 1987.

Commercial MMORPG's gained early acceptance in the late 1980s and early 1990s. The genre was pioneered by GemStone on GEnie, also created by Kesmai, and Neverwinter Nights, the first such game to include graphics, on AOL.

As computer game developers applied MMO ideas to other computer and video game genres, new acronyms started to develop, such as MMORTS. *MMOG* emerged as a generic term to cover this growing class of games. These games became so popular that a magazine, called *Massive Online Gaming*, released an issue in October 2002 hoping to cover MMOG topics exclusively, but it never released its second issue.

The debuts of Ultima Online and EverQuest in the late 1990's popularized the MMORPG genre. The growth in technology meant that where Neverwinter Nights in 1991 had been limited to 50 simultaneous players (a number that grew to 500 by 1995), by the year 2000 a multitude of MMORPG's were each serving thousands of simultaneous players.

Despite the genre's focus on multiplayer gaming, AI-controlled characters are still common. NPCs and mobs who give out quests or serve as opponents are typical mostly in MMORPGs. AI-controlled characters are not as common in action-based MMOGs.

The popularity of MMOGs was mostly restricted to the computer game market until the sixth-generation consoles, with the launch of Phantasy Star Online on Dreamcast and the emergence and growth of online service Xbox Live. There have been a number of console MMOGs, including *EverQuest Online Adventures* (PlayStation 2), and the multiplatform Final Fantasy XI (PC, PS2 {except in Europe} and soon Xbox 360).

On PC's, The massively multiplayer market has always been dominated by successful fantasy MMORPGs such as Ultima Online, EverQuest, Asheron's Call, Ragnarok Online, Anarchy Online, Star Wars Galaxies, Dark Age of Camelot, City of Heroes, Final Fantasy XI Lineage and Eve Online.

Several of the most recent sucessful MMOG titles are Everquest 2, Lineage 2 and World of Warcraft.

Some upcoming MMO titles that show promise are Vanguard and Dark and Light.

Comparing MMOG's to other computer games

There are a number of factors shared by most MMOGs that make them different from other types of computer games. MMOGs create a persistent universe where the game continues playing regardless of whether or not anyone else is. Since these games strongly or exclusively emphasize multiplayer gameplay, few of them have any significant single-player aspects or client-side artificial intelligence. As a result, players cannot "finish" MMOGs in the typical sense of single-player games. Some MMOGs, such as Star Sonata, do have an end condition that includes awarding a "winner" based on a player's standing in the game at the finale.

Most MMOG's also share other characteristics that make them different from other multiplayer online games. MMOG's host a large number of players in a single game world, and all of those players can interact with each other at any given time. Popular MMOG's might have thousands of players online at any given time, usually on a company owned server. Non-MMOG's, such as Battlefield 1942 or Half-Life usually have less than 50 players online (per server) and are usually played on private servers. Also, MMOG's usually do not have any significant mods since the game must work on company servers. There is some debate if a high head-count is the requirement to be a MMOG. Some say that it is the size of the game world and its capability to support a large number of players that should matter. For example, despite technology and content constraints, most MMOG's can fit up to a few thousand players on a single game server at a time.

To support all those players, MMOG's need large-scale game worlds. In some MMOG's, large areas of the game are interconnected as such that a player can traverse vast distances without having to switch servers manually. For example, Tribes comes with a number of large maps. A server plays in rotation (one at a time), but in the MMOG PlanetSide all map-like areas of the game are accessible via flying, driving, or teleporting.

In a new MMO development, the space sim Eve Online has up to over 22,000 people playing simultaneously on one server. This is different from most other MMO's that might have a far larger player base, but spreads the players over a large number of servers.

There are also a few more common differences between MMOGs and other online games. Most MMOG's charge the player a monthly or bimonthly fee to have access to the game's servers, and therefore to online play. Also, the game state in an MMOG rarely ever resets. This means that a level gained by a player today will still be there tommorow when the player logs back on. MMOG's often feature ingame support for clans and guilds. The members of a clan or a guild may participate in activities with one another, or show some symbols of membership to the clan or guild.

However, the boundaries between multiplayer online games and MMOG's are not always as clear or obvious. Neverwinter Nights (2002) and Diablo II are usually called online role-playing games, (RPGs) but are also sometimes called MMORPGs (a type of MMOG). Guild Wars has been called an MMORPG, but most of its gameplay involves small groups of players in private areas. The game's developer prefers the term "competitive online role-playing game".

Types of MMOG's

There are several types of massively multiplayer online games.

MMORPG

Massive multiplayer online role-playing games, known as MMORPGs, are perhaps the most famous type of MMOG. See **MMORPG** for more information.

MMOFPS

Several MMOFPS's first-person shooters have been made. These games provide large-scale, sometimes team-based combat. The addition of persistence in the game world means that these games add elements typically found in RPGs, such as experience points. The first MMOFPS was probably 10SIX, released in 2000. Other popular MMOFPS games include World War II Online, and PlanetSide. For building your own MMOFPS, there are now free MMOG game engines, like *Kaneva*.

MMORTS

A number of developers have attempted to bring real-time strategy games into the MMOG fray. Some notable MMORTS games include Mankind and Shattered Galaxy. See **massively multiplayer online real-time strategy** for more information.

BBMMORPG

Browser Based Massive Multiplayer Online Role-Playing Games are MMORPGs played through an internet browser, saving the developer the hassle of creating a client for its game, and the players the hassle of downloading one. They usually use browser plugins and extensions, along with server-side scripts such as PHP and mySQL and have 2D graphics (Like Future Infinity) or are text-based (Like Hero Battle). Their largest disadvantage is that of browser compatability; making sure the game plays the same in mainstream browsers such as MS Internet Explorer and Firefox, as well as less common ones.

Popular browser based MMO's include Kings of Chaos, AdventureQuest, Ogame, Urban dead, Mercenary Lords, Travian, and others.

Others

Most other MMOs are apparently simulation games, such as Motor City Online, The Sims Online (though this is often called an MMORPG), Ace of Angels, and Jumpgate. There are also games like Second Life, Furcadia and There that derive from the tradition of MUSHes, emphasizing socializing and world-building.

In April 2004, the United States Army announced that it is developing a massively multiplayer training simulation called AWE (asymmetric warfare environment) that was expected to begin operation among soldiers by June. The purpose of AWE is to train soldiers for urban warfare and there are no plans for a public commercial release. Forterra Systems Inc. is developing it for the Army based on the There engine.

Alternate reality games (ARGs) can be massively multiplayer, allowing thousands of players worldwide to co-operate in puzzle trails and mystery solving. ARGs take place in a unique mixture of online and real-world play that usually does not involve a persistent world, and are not necessarily multiplayer, making them different from MMOGs.

Considered by some to be a MMORPG, Castle Infinity was the first MMOG developed for children. Its gameplay, however, is somewhere between puzzle and adventure, making it more like a massively multiplayer platformer than a MMORPG.

'Quick Fix' MMOGs, such as *Racing Frogs* are MMOGs that can be played with only a small amount of time every day.

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MMORPGs

A **MMORPG** (**Massively Multiplayer Online Role-Playing Game**) is an online computer role-playing game in which a large number of players can interact together or against one another in the same game at the same time. An MMORPG follows a client-server model in which players, running the client software, are represented in the game world by an avatar — this is usually a graphical representation of the character they play. Providers, usually the game's publisher, host the persistent worlds these players inhabit. This interaction between a virtual world, always available for play, and an ever-changing, potentially worldwide stream of players characterizes the MMORPG genre.

Once a player enters the gameworld they can engage in a variety of activities with other players ranging from chat with their friends or guild members to teaming up in order to kill large enemies or to complete complex tasks or quests that are not achievable alone. Killing these enemies (typically referred to as mobs by gamers) yield the players experience points (commenly abbreviated as Exp or Xp) and equipment or loot such as armor and weapons. Both the experience points (used to "level up" the character or his abilities) and the loot gained from slaying mobs, help to improve the character so he can handle fighting in more adverse situations. The people who develop MMORPGs are in charge of supervising this virtual world and offering the users a regularly updated set of new activities and enhancements to guarantee a continual interest in the game.

As most MMORPGs are commercial, like EverQuest and World of Warcraft, players must either purchase the client software for a one-time fee or pay a monthly subscription fee to access the virtual world. Most major MMORPGs require players do both these things. There are free-of-charge online games found on the Internet, although their production quality is generally lower compared to their "pay-to-play" counterparts.

MMORPGs are immensely popular, with several commercial games reporting millions of subscribers. South Korea boasts the highest subscription numbers, with millions of users registered with the more popular games; see list of MMORPGs for a list of the most prominent MMORPGs.

History

The beginning of the MMORPG genre are can be traced back to non-graphical online Multi-User Dungeon (MUD) games such as those developed in the late-1970s for the PLATO System. Earlier games such as pedit5, dnd, Dungeon, orthanc, baradur, bnd and sorcery were multi-user games, but the players could not interact with one another. Subsequent games on PLATO including oubliette, avathar (later renamed avatar), emprise and moria allowed players to interact, including helping each other in battle and trading equipment. A line-drawn pseudo-3D display style also evolved during this time. (Moria for PLATO should not be confused with the later VAX VMS based game, Moria.)

1980s

The first text-based commercial MMORPG (although what constitutes "massive" requires some context when discussing mid-1980s mainframes) was Islands of Kesmai designed by Kelton

Flinn and John Taylor. This game became available to consumers in 1984 at the cost of $12.00 per hour via the CompuServe online service.

Debuting in 1988 in a reduced form and under the name Habitat, Club Caribe was a "graphical environment" designed by LucasArts for Q-Link. In this game, users could interact with one another, chat, and exchange items. Although it was not a game, its combination of graphics, avatars and chat was revolutionary for the time.

Early 1990s

The first commercial graphical MMORPG was Neverwinter Nights by designer Don Daglow and programmer Cathryn Mataga, which went live on AOL in 1991 and ran through 1997. The project was personally championed and green-lighted by AOL President Steve Case, and cost $6.00 per hour to play.

During the early-1990s, commercial use of the internet was limited by NSFNET acceptable use policies. Consequently, early online games like Neverwinter Nights, GemStone III, Dragon's Gate and Federation II relied upon proprietary services for distribution such as CompuServe, America Online, and GEnie.

Following *Neverwinter Nights* was The Shadow of Yserbius, a MMORPG within The Sierra Network (TSN) which ran from 1992 through 1996. The game was produced by Joe Ybarra. The Shadow of Yserbius was an hourly service, although it also offered unlimited service for $119.99 per month, until AT&T acquired TSN and rendered it strictly an hourly service.

As the NSFNET restrictions were relaxed, traditional game companies and online services began to deploy games on the internet. The first commercial text-based MMORPG to make this transition from a proprietary network provider (CompuServ, in this case) to the Internet was Legends of Future Past, designed by Jon Radoff and Angela Bull. It was a fantasy roleplaying game featuring an evolving world and professional Game Masters who conducted online events. The game was offered through the Internet for $3.60 per hour in 1992 and ran until 2000.

Late 1990s

The Realm Online was a successful early MMORPG launched by Sierra Online in 1996. The Realm Online included a basic, two-dimensional graphics engine and Dungeons & Dragons style character levels. It had a basic user inferface and turn-based combat, also taken from the Dungeons & Dragons mold.

Ultima Online, released in 1997, is credited with popularizing the genre. The game featured a flat monthly subscription fee (first introduced by the 3DO game Meridian 59 in 1996) instead of the hitherto-traditional per-hour plan; the monthly fee has since become the standard for most MMORPGs. This new pricing model has also been seen as the motivation for business to shift from the 'hardcore gamer' audience (who racked up massive fees) towards a broader, more massive market. *Meridian 59* and *Ultima Online* also set the precedent for monthly $10 USD subscriptions, a figure that would later gradually increase across the genre. These were the first games that used and spread the term "massively multiplayer".

Meanwhile, commercial online games were becoming extraordinarily popular in South Korea. Nexus: The Kingdom of the Winds, designed by Jake Song, began commercial service in 1996 and eventually gained over one million subscribers. Song's next game, Lineage (1998), was an even bigger success. Lineage reached millions of subscribers in Korea and Taiwan, and gave developer NCsoft the strength to gain a foothold in the global MMORPG market for the next few years.

Launched in March 1999 by Verant Interactive and later acquired by Sony Online Entertainment, EverQuest drove fantasy MMORPGs into the Western mainstream. It was the most commercially successful MMORPG in the United States for five years and was the basis for ten expansions (as of December, 2005) and several derivative games. TIME magazine and other non-gaming press featured stories on EverQuest, often focusing on the controversies and social questions inspired by its popularity. Asheron's Call launched later in the year and was another hit, rounding out what is sometimes called the original "big three" of the late 1990s (Ultima Online, EverQuest and Asheron's Call). Yet another fantasy game, Asheron's Call at least featured an original universe; the world of EverQuest was heavily influenced by D&D, and Ultima Online took place in the same universe as several other Ultima games . The future continued to look bright as Origin Systems revealed it had begun developing Ultima Online 2.

2000 to present

By the turn of the century the concept of massively multiplayer online games expanded into new video game genres. Many of these games, such as the massively multiplayer online first-person shooter *World War II Online* (2001) brought some of the RPG heritage with them.

For fans of the genre, 2000 was a relatively quiet year, but developers and investors were buzzing to jump into the continually expanding market. *Dark Age of Camelot* was launched in early 2001 and can be seen as the first successful fantasy MMORPG of the 21st century. It launched smoothly, required less time to gain levels and had an integrated player versus player combat system. Critics dismissed the sci-fi MMORPG *Anarchy Online* while it suffered through its rough first month in June 2001. Growth of the 'big three' nearly plateaued during 2001 and *Ultima Online 2* was cancelled while still in development, indicating that the market had possibly been saturated.

In an attempt to keep players paying monthly fees, companies such as Sony Online Entertainment sought solutions of their own by introducing an optional single flat rate allowing players to take out a concurrent subscription with all of their MMORPGs. Many players argued the fees as they were reluctant to continue paying for a game beyond the initial purchase of the software. The release of Guild Wars in April 2005 represented NCsoft's investment in the possible profitability of an online RPG with a one-time fee. *Guild Wars* did not share many of the distinguishing features of typical MMORPGs such as the massive persistent game world, the subscription fee, the large time investment required to play, and the largely server-dependent software architecture and as such was termed a Competitive Online Role-Playing Game (CORPG) by the developers.

On August 4, 2005, the Chinese government announced a ban on all "violent" gameplay for minors under 18. Chinese officials defined 'violent' as any game that involves player vs. player combat, a common feature among MMORPGs. Later in August the same year, the Chinese government imposed online gaming curbs so players can not play more than three consecutive hours.

Academic attention

MMORPGs have begun to attract significant academic attention, notably in the fields of economics and psychology. Edward Castronova specializes in the study of virtual worlds (MUDs, MMOGs, and similar concepts). Most of his writings, including "Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier" (2001), have examined relationships between real world economies and synthetic economies.

With the growing popularity of the genre, a growing number of psychologists and sociologists study the actions and interactions of the players in such games. One of the more famous of these researchers is Sherry Turkle. Another researcher is Nick Yee who has surveyed more than 35,000 MMORPG players over the past few years, focusing on psychological and sociological aspects of these games. His research can be found at The Daedalus Project.

Amateur development

Many small teams of amateur programmers and artists have tried to create their own MMORPGs. The average MMORPG project takes three to four years to create and large investments of money. Amateur development usually takes longer due to lack of developer's time, manpower or money. Additionally, the costs required for running MMORPG servers may be a reason for projects to be abandoned.

The most well-established amateur projects are AWplanet, Daimonin, Endless Online and Planeshift. Daimonin and Planeshift are entirely open source. The developers of Endless Online have released technical development information with details about their coding.

The WorldForge project has been active since 1998 and formed a community of amateur developers who are working on creating framework for a number of open-source MMORPGs.

Browser-based MMORPGs

With the success of the MMORPG genre in recent years, several multiplayer games played in web browsers have also begun using the MMORPG moniker. This largely text-based sub-genre developed from old BBS games and pre-dates the modern idea of an MMORPG. Browser-based MMORPGs are usually simpler games than their stand-alone counterparts, typically involving turn-based play and simple strategies (e.g. "build a large army, then attack other players for gold"), though there are many interesting variations on the popular themes to be found. Many of these games are more like turn-based strategy games or wargames than role-playing games. In Planetarion players control planets and fleets of ships; in Kings of Chaos the player commands an army rather than a single player character. In Pardus, the player controls a character who owns a spaceship and gains experience points through trading or fighting, in a way similar to the classic game Elite.

One of the earliest examples of a browser-based MMORPG is Archmage, which dates back to early 1999. Currently, an extremely popular browser-based MMORPG, Kings of Chaos, boasts a player population numbering in the hundreds of thousands. Its popularity is primarily fuelled by a reciprocal link clicking system where users give each other more soldiers by clicking on their friends' unique links, taking advantage of the small world phenomenon to spread word of the game across the world. Some examples of click based MMORPG's are Legend of the Green Dragon and World of Phaos, whose code is open source, allowing anyone to create their own game server. Another browser-based MMORPG, Kingdom of Loathing, largely parodies other games. Some of the more popular of these have become profitable through user subscriptions. One example of a free modern, popular text-based MMORPG is Urban Dead. Others are played by free but get little money through advertisements and donations like Syrnia.

Not all browser-based MMORPGs are turn-based text games. More recently, faster computers and the Java programming language have allowed the introduction of graphical browser-based MMORPGs such as *RuneScape* which are more similar to standalone MMORPGs.

MUD

Main articles: MUD

MUDs are a form of MMORPGs, and are most likely the predecessor of MMORPGs. Like most commercial MMORPGs found today, the player logs onto a server, and the player will interact with other players in real time. However, MUDs are played through text and occasionally ASCII graphics rather than full graphics. Most of the time, MUD uses the telnet protocol for players to interact with the server. Since MUDs lack graphics and requires reading large amounts of text, players playing MUDs use imagination to create an image of the game setting.

Genre challenges

Most MMORPGs require significant development resources to overcome the logistical hurdles associated with such large production efforts. Online games require virtual worlds, significant hardware requirements (e.g., servers and bandwidth), and dedicated support staff. Despite the efforts of developers cognizant of these issues, reviewers often cite non-optimal populations (such as overcrowding or under-populated worlds), lag, and poor support as problems of games in this genre. These problems tend to be worse for free MMORPGs. Peer-to-peer MMORPGs could theoretically scale better because peers share the resource load, but practical issues such as asymmetrical network bandwidth and CPU-hungry rendering engines make peer to peer MMORPGs a difficult proposition. Additionally, they become vulnerable to other problems such as cheating.

Several MMORPGs have suffered through technical difficulties through the first few days (or weeks) after launch. Early successes such as *Ultima Online* and *EverQuest* managed to pass through this stage with little permanent damage. Few games may have significant failures, leading ultimately to their demise, if they launch too early and contain frequent bug fixes, downtime, or structural game changes that may discourage players from continuing to play the game. Due to these problems, games such as Anarchy Online and World War II Online struggled to regain good press after their first month, and gained good press after stabilizing their servers. Dark Age of Camelot and City of Heroes showed hardly any signs of such difficulties.

Cheating

Main articles: Cheating in online games

Cheating is a major and inevitable difficulty for the game developers. Cheating can come in form of many ways. Botting is when a player uses a script that could automate progress through the game without actually playing the game. This could be done with a simple macro program which records keystrokes and mouse movements, or scripting program that could make “smart” keystrokes, such as AC Tools. Other forms of cheating includes, when a player uses a flaw in the game mechanics to gain advantages, which known as exploiting. Depending on the situation, game developers usually fix the exploits within hours or even minutes through patches and updates.

Private servers

Single-client based graphic MMORPGs may have private servers or server emulators. Private servers are mostly run by volunteers, therefore most of them are free. However, some private servers may wish for people to donate money, sometimes in exchange for a bonus in the game. Private servers remain markedly less popular than the official servers, with player numbers in the hundreds, not thousands. *EQEmu* is a server emulator for *EverQuest*, others exist for *World of Warcraft*, *Lineage II*, *Ultima Online*, and many other MMORPGs.

In China as well as many other Asian countries the use of private servers is more prevalent. Most Chinese MMORPG players are aware of the existence of private servers, and according to statistics more people prefer private servers than official servers. The reasons for this are the relatively high fees for official servers and the availability of 100MB/s fiber optic internet connections, which can be as cheap as US$30 a month. Also, the costs of running a server in China are also remarkably low. In one instance, a private server had more than 50 000 players registered. Some even have 1000 accounts in 1 day (the opening day). Among such cases are *Mu Online* which is one of the most popular private server games in the world, with a total of over 10,000 private servers. Private servers have significantly damaged the commercial MMORPG development. Many gamers in China feel the companies that developed MMORPG purposely made the leveling progress slow, therefore more money could be made off the gamers. Most of the private servers have placed higher experience rate, and players could progress through game faster than retail servers.

See also

- Computer role-playing game
- List of MMORPGs
- MMOFPS
- MUD
- Browser game

References

Ferrell, Keith. (November 1987) "The Future Of Computer Games: Ten Industry Leaders Speak Out". COMPUTE!
Kent, Steven (September 23, 2003). "Alternate Reality: The history of massively multiplayer online games". GameSpy.
Bartle, Richard A. (2003). Designing Virtual Worlds. Indianapolis: New Riders. ISBN 0-1310-1816-7.
"Massively Money-Eating Online Games" (October, 2005) PC Gamer 12 (10), p.28

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List of MMORPGs

This is a **list of massively multiplayer online role-playing games** (MMORPGs). For non -role-playing games. (Note: External links are provided here for non-existent articles.)

By graphics

Sprite-based

Argentum Online
Arindal (website)
Ashen Empires
Astonia
Cantr II
Clan Lord
Conquer Online
Crossfire
Daimonin
Dark Ages
Deloria Online
Dofus
EUO
Endless Online
Furcadia
Graal Online
Helbreath
Hostile Space
The Legend of Mir 2
The Legend of Mir 3
Lineage: The Bloodpledge
Loradon Online (website)
Maple Story
Mystera Legends (website)
Mystera Legends:Janelle's (A server of ML)
Neverwinter Nights (AOL) -- original AOL version, 1991-97). The first graphical MMORPG.
Nexus: The Kingdom of the Winds
Nowhere else and beyond
Oberin (website)
Race War Kingdoms (website)
The Realm Online
RPG World Online (website)
Silent-Shadows (website)
Steel Law Online
Stendhal
Starport: Galactic Empires
The 4th Coming (website)
Tibia

Ultima Online
Vorlia (website)
Wyvern
Xenimus
Yohoho! Puzzle Pirates

3D world with sprite characters

Active Worlds
Darkeden
GraalOnline
Maple Story
Ragnarok Online
RuneScape Classic
Westward Journey
Flyff
Goonzu Online (website)
Monster and Me (website)

3D

A Tale in the Desert
Adellion (under development)
Age of Conan: Hyborian Adventures (under development)
Ahora Ahou (under development)
Anarchy Online
Argentum Online 2 (under development)
Asheron's Call
Asheron's Call 2 (deceased)
AWplanet (formerly known as Portal to Another World)
City of Heroes
City of Villains
Dark Age of Camelot
Dark and Light (under development)
Darkfall (under development)
Dungeons & Dragons Online (under development)
EMPIRE (under development)
Endless Ages
Eternal Lands
EVE Online
EverQuest
EverQuest II
Final Fantasy XI

FreeWorld Online (website)
Gekkeiju Online
Gorilla Paintball (website)
Granado Espada
Guild Wars (technically not an MMORPG, but has similiarities to it)
Hero's Journey (under development)
Heru Ki: Tree of Hell (under development)
Horizons: Empire of Istaria
Irth Online
KAL-Online
Knight Online
Laghaim (website)
Lejendary Adventure (under development)
Lineage II
Meridian 59
Mourning
MU Online
Pirates of the Burning Sea
PlaneShift (under development)
PlanetSide
Priston Tale
Project Entropia
Rakion
Ran Online
Realm fighter (beta released) (website)
Rising Force Online (In BETA)
Roma Victor
ROSE Online
Rubies of Eventide
RuneScape
Risk Your Life: Path of the Emperor
Silkroad Online (In BETA) (website)
Storm Riders Online (website)
Tantra Online (website)
Thang Online (website)
Lord of the Rings Online (formerly known as Middle-Earth Online) (under development)
The Saga of Ryzom
The World Online
Toontown Online
True Fantasy Live Online (website) (cancelled, previously under development)
Shadowbane
Underlight (website)

Uncharted Waters Online
Vanguard: Saga of Heroes (under development)
Vendetta Online
Warhammer Online
Wish (cancelled, previously under development)
World of Warcraft
Wurm Online (alpha testing)
Xiah (website)
Xenimus

Mobile

Fantasy Worlds: Rhynn (website)
UnderCover 2: Merc Wars ([1])
Tibia Micro Edition ([2])

Free to Play

Future Infinity (browser based)
Colony-Wars (browser based) (website)
Dark Throne (browser based)
Dead Awaken (browser based)
Fly For Fun (client based)
Gorilla Paintball (website)
Illarion (Download and client based)
KalOnline (website)
Kingdom of Loathing (browser based)
Maid Marian (browser based)
Maple Story (free, client-based)
Martial Heroes (free, download and client based) (website)
Merchant Empires (browser based)
Pardus (browser based)
Particracy (browser based)
Race Conflicts (website)
RPG World Online (website)
Rubies of Eventide
Runescape (monthly fee required to access most game content)
Second Life
Sector42 (Download and browser based) (in ALPHA)
Silkroad Online (in BETA)
Star Sonata (some f2p, client based)
Starport: Galactic Empires (Download based, Totally Free with option to buy in game items)

The Kingdom of Loathing (browser based)
There (basic account now free)
Urban Dead (browser based)
Wyvern
Yohoho! Puzzle Pirates (unlimited free trial, in-game tradable doubloon micropayments)

Science fiction

Anarchy Online
Atriarch (under development)
Auto Assault (under development)
Battletech: The Frontier Lands
Earth & Beyond (no longer in service)
Endless Ages (website)
EVE Online
Evolution (Round 5)
Face of Mankind
Imperator Online
Jumpgate
Kings of Chaos
The Matrix Online
Merchant Empires (free, browser-based)
MobCulture (closed alpha)
Neocron
Omega 17 (website)
Pardus (free, browser-based)
Phantasy RPG (website)(free, browser-based)
Phantasy Star Online
Phantasy Star Online: Blue Burst (website)
Ramath-lehi (website)
Robot Game (website)
Shattered Galaxy
Starport: Galactic Empires (website)
StarQuest Online (In BETA)
Star Sonata
Star Trek Online (under development)
Star Wars Combine (free, browser-based)
Star Wars Galaxies
TDZK
Vendetta Online

Comic book setting

City of Heroes
City of Villains

Cartoon setting

Anime Chat World (website)
Toontown Online
MapleStory
Habbo Hotel
Virtual Magic Kingdom

Historical

A Tale in the Desert
Roma Victor
Pirates of the Burning Sea
Visions of Zorth (German / English) (website)

Modern setting

MobCulture (closed alpha)
Shenmue Online (under development - Asia only currently)
The World Online
Battleground Europe (World War 2 On Line v.2)

Text

Age of Chaos
Dead Awaken (Browser Based)
DragonRealms
GemStone IV
MajorMUD
Exploring Azoundria (Browser Based & FREE)

See also

- MMORPG

- Internet game

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MMOFPSs

Massively multiplayer online first-person shooter (**MMOFPS**) is a category of computer games that combines first-person shooter gameplay with a large number of simultaneous players over the Internet. It is a category of massively multiplayer online games.

About

Unlike a traditional online or multiplayer FPS, a MMOFPS can use interconnected zones or areas to create a larger world in which thousands of players can interact. Example MMOFPS games include World War II Online (2001), PlanetSide (2003), and Huxley (2006).

Due to the technical issues introduced with large numbers of simultaneous players, few MMOFPS games have been developed. MMOFPS games tend to require more powerful computers than MMORPGs to meet the demands of faster gameplay. MMOFPS developers also have to be more concerned about lag since reaction times must be swift and MMOG servers tend to be in a centralized location (which might not be convenient for players a long distance from there).

As with many massively multiplayer games, most MMOFPS games charge a monthly fee to play. This pays for the maintenance costs for the servers and bandwidth as well as a "live" development team to update the game and fix bugs as needed.

MMOFPS Games

World War II Online

World War II Online is considered by many to be the first MMOFPS, although it also combines simulation and roleplaying elements. It was released on June 6, 2001.

PlanetSide

PlanetSide is a massively multiplayer first-person shooter computer game published by Sony Online Entertainment and released on May 20, 2003. The number of players was over 40,000 in September 2004.

See also

- First-person shooters

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MMORTSs

Massively multiplayer online real-time strategy (**MMORTS**) is a category for computer games that combines real-time strategy (RTS) with a large number of simultaneous players over the Internet. It is a type of massively multiplayer online game.

Example MMORTS games include Shattered Galaxy and Mankind. Project Visitor combines overhead army control of RTS with first-person combat (for example, for defensive/offensive respectively). Majorem's Ballerium tries to generate a closer RTS experience for the MMO category. Other games that have been called MMORTS include DarkSpace, *Time of Defiance* and *Eschaton: Chain of Command*.

In 2002, *Dune Generations*, potentially innovative but with technical issues, was canceled following Cryo Interactive' judiciary problems with its creditors. Again, two notable MMORTS were cancelled in early 2003: Trade Wars: Dark Millennium and Sony Online Entertainment's Sovereign. Majorem's Ballerium was in development for several years, suspended in October 2004, but reported to be back in development in December 2004, after signing a publishing deal with Interplay Entertainment. But Ballerium was cancelled on June 15, 2005 after Interplay failed to provide additional funds for further production, only to be brought back online by it's core developing team, supported by the community. In 2005, Stardock also announced the development of their highly innovative Society, which should have a free version and an enhanced version with bonus for such as modern RTS graphics. In August 2005, Lockpick Entertainment announced their own MMORTS. Dreamlords is scheduled for release in 2006.

See also: MMORPG (Massively multiplayer online role-playing game)

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Platform Games

Platform game, or **platformer**, is a video game genre characterized by the player having to climb up and down, or jump from and to, platforms and ledges, while fighting enemies and collecting objects required to fully complete the game. Often, the player has the ability to gain powers or weapons, called power-ups. Generally, platform games, due to their unrealistic nature, have cartoon-like graphics, and with the recent advent of cel-shaded animation may appear to be hand-drawn; in addition, platformers' character and adversaries are usually legendary creatures (e.g. dragons and goblins) or anthropomorphic animals (e.g. a gorilla who rolls barrels).

Platform games originated in the early 1980s and made the transition to 3D in the mid-1990s. Sometime after the genre's inception, the term came to describe games where jumping on platforms, as opposed to shooting, was the main gameplay focus. However, many platform games feature projectile weapons, including the Mario and Castlevania franchises.

History

The 2D era

Platform games appeared in the early 1980s, when video game consoles were not yet powerful enough to render 3D games. They were confined to static environments fitted to the screens, with the playable character viewed from a profile angle. The protagonist climbed up and down ladders or jumped from platform to platform, often while combating foes and collecting power-ups. The first game of this kind was Donkey Kong, an arcade game created by Nintendo, released in 1981. Soon level advancement changed from being mainly vertical to largely horizontal, as well as introducing multiple screen-width spanning scrolling environments. Pitfall!, released by Activision for the Atari 2600 in 1982, is considered by many to have started the trend. Manic Miner (1983) and its sequel Jet Set Willy (1984) were among the most popular platformers on home computers.

Nintendo's Super Mario Bros., released for the Nintendo Entertainment System in 1985, spawned a revolution not only in the platform game genre, but in the video game industry as a whole. It introduced players to huge and intricate worlds, and set a precedent in gameplay and level design for other game developers to follow, and to this day many people consider it one of the best games ever made. Its popularity was unprecedented, and its record sales of 40.23 million copies worldwide is still unmatched. The game was for many the first experience of a platformer and solidified Mario's position as Nintendo's mascot.

The popularity of platform games continued into the 1990s, with many titles being released for the handheld Game Boy and Game Gear, and the 16-bit Sega Genesis and Super Nintendo. A trend following the release of Sonic the Hedgehog in 1991 was for developers to create platform games starring a funny animal cartoon character often intended to become the mascot of their developer; examples include Earthworm Jim, Zool, Cool Spot, Donkey Kong Country, and Rocket Knight Adventures. Frequently, games based upon licenced films, TV show, and comic book franchises would be platformers, such as those based on Aladdin, Jurassic Park, Batman, James Bond, and Mickey Mouse.

A common criticism of platform games (particulary licensed games, which are often rushed to release to meet concurrent release with the property they're based on) was their lack of originality in chosen subject matter, generally falling back on standard snow-, fire- or jungle-themed environments and linear level structure. Games such as *Earthworm Jim* were widely praised for moving away from the formulaic and into more surreal and imaginative settings.

Although the number of 2D platform games created has declined since the mid-1990s, when the Mega Drive and Super Nintendo began to be abandoned in favor of systems with stronger 3D capabilities, the genre has enjoyed continued success on handheld devices such as the Game Boy Advance.

The 3D era

The term "*3D platformer*" may refer either to a gameplay involving all three dimensions, a use of real-time 3D polygons in levels and characters, or both of these. The advent of 3D platformers brought a change in the goals of some platformers. In most 2D platformers, the player only had to reach a single goal to complete a level, but in many 3D platformers, each level had to be combed for collectable items such as puzzle pieces (Banjo-Kazooie) or stars (Super Mario 64). This allowed for more efficient use of large 3D areas and rewarded the player for thorough exploration, but some found collecting countless trinkets more tedious than challenging. Donkey Kong 64 was widely criticized because of how the player had to frequently rotate between five different characters in order to pick up different colors of bananas and other items. However, not all 3D platformers were like this, most notably *Crash Bandicoot*. It remained true to the 2D tradition by using fairly linear levels, each with a goal at the end.

Some of the earliest 3D platform games were released on the Sega Saturn: Clockwork Knight was released in December 1994 as a launch game in Japan (and subsequently as a launch game in the U.S.) While the game featured levels and boss characters rendered in 3D, it could be considered "2.5D" due to its 2D gameplay and the use of prerendered 2D sprites for regular characters, similar to Donkey Kong Country (the sequel improved upon this with some 3D effects such as hopping between the foreground and background, or the camera panning and curving around a corner). Bug!, another Saturn game that was released in 1996, used 3D level designs but restricted the player to set paths (which often went left-to-right more than front-to-back). Its characters were sprite-based (while the developer claimed that all characters were "*rendered in glorious 3D*"[1], a less misleading word would be "prerendered"). Another 3D platfomer was on the Sony PlayStation - Jumping Flash!, released in April 1995, was one of the earliest games for the system, and predated *Super Mario 64* by over a year. The game used mostly 3D polygons and featured a first-person perspective.

Though *Super Mario 64*, released for the Nintendo 64 in Japan in June 1996, was not the first 3D platformer, it redefined the genre and became the landmark game which set the rules for following titles of the type. The gameplay was innovative in allowing the player to explore large 3D environments in all dimensions at will. Nintendo's newly introduced analog control stick, allowing for 360 degrees of movement, was another strong factor in its success. Moreover, while most 2D titles had previously consisted of a fairly linear path through the game, progressing from easy to difficult levels, *Super Mario 64* used a central hub for access to levels, which became the predominant design.

Following successful series of 3D platform games in 1990s include *Crash Bandicoot* and *Spyro the Dragon*, both for the PlayStation.

In 2002, *Super Mario Sunshine*, the second 3D *Mario* game, was released. Although not as revolutionary as its predecessor, it features difficult platform areas that were similar to some levels from *Super Mario 64*.

A notable use of characters in the sixth generation era is the characters being paired or grouped together, pioneered by Banjo-Kazooie in 1998. Jak and Daxter, Ratchet & Clank, and Sonic Heroes are examples of these types of paired games. The derivation of the platform genre can also be seen by the genre being mixed with action, tactical, and other genres: Blinx, Maximo, and Sly Cooper are good examples.

The complaints over lack of innovation carried over with the transition from 2D to 3D, but new criticisms sprang up as well. The most major largely focused on the difficulty of creating a consistently unobtrusive in-game camera system. 2D platformers were not susceptible to the problems of judging jumps through 3D environments on a 2D screen with little more than a tiny shadow on the ground to guide the player to the correct landing spot (problems which were even more obvious when the player was jumping "towards the screen"). Worse still was cameras getting "stuck" behind objects in the gameworld, obscuring the action at critical moments. Developers have attempted to alleviate these problems in various ways: making objects between the camera and the player's avatar semi-transparent; introducing "free cameras" which increased flexibility but required input from the player to control the camera as well as their character; Tomb Raider used grid-like layouts for platforms so that the experienced player could tell whether they could "make" a jump as long as they used the correct button press; the more recent Galleon attempted to unify character and camera control. To this date, arguably no platform game has been completely free from this type of criticism: Prince of Persia: The Sands of Time was praised for flexible and spectacular camera angles during exploration sequences, but suffered during combat sections.

Chronology of significant platform games

Donkey Kong (Nintendo, 1981) - First game featuring Mario (known as Jumpman at the time).
Space Panic (Universal, 1980).
Pitfall! (Activision, 1982) - First platformer that originated on a console.
Miner 2049er (Big Five Software, 1982).
Jumpman (Epyx, 1983).
Manic Miner (Bug-Byte, 1983) and its sequel Jet Set Willy (1984).
Chuckie Egg (A'n'F, 1983).
Monty on the Run (Gremlin Graphics, 1985) - ZX Spectrum & CBM 64 classic.
Super Mario Bros. (Nintendo, 1985) - Perhaps the most well known platformer; best-selling game of all time.
Mega Man (Rockman) (Capcom, 1987)
Haunted Castle (Konami, 1988)
Captain Comic (Michael Denio, 1988) - Possibly first PC platformer.
Prince of Persia (Brøderbund, 1989) - Renowned for high-quality

animation.
Super Mario Bros. 3 (Nintendo, 1990) - Highest grossing console game before Pokémon.
Commander Keen (id Software, 1990) - First major PC platformer.
Sonic the Hedgehog (Sonic Team, 1991) - First platform game to be considered a rival to the Mario series.
Another World (Delphine Software, 1991) and Flashback (1992) - Praised for cinematic qualities and fluid and realistic animation of human characters.
ToeJam and Earl (Sega, 1992) - First platformer where two playable characters played a significant role.
Aladdin (Genesis version, Virgin Interactive, 1993) - One of the first widely-praised film-licenced games; the game's graphics were created by Disney animators who had worked on the film.
Jazz Jackrabbit (Epic MegaGames, 1994).
Earthworm Jim (Shiny Entertainment, 1994).
Donkey Kong Country (Rareware, 1994) - The game's 2D sprites were created from pre-rendered 3D graphics.
Clockwork Knight (SEGA Entertainment, 1994) - Early 2.5D platformer; levels and bosses rendered in 3D, with 2D gameplay and pre-rendered sprites.
Jumping Flash! (Exact, 1995) - Early 3D platformer; first PS1 platformer; 3D models and gameplay.
Bug! (Realtime Associates, 1995) - Early 3D platformer; limited-3D gameplay, pre-rendered 2D sprites.
Super Mario 64 (Nintendo EAD, 1996) - Highly innovative (and widely-acclaimed) free-roaming 3D platform game.
Crash Bandicoot (Naughty Dog, 1996) - The only other platform game considered to be a major rival to Mario.
Tomb Raider (Core Design, 1996) - Brought the adventure, puzzle and exploration aspects of games such as Prince of Persia into 3D.
Castlevania: Symphony of the Night - Popular 2D game, similar to Super Metroid; demonstrated continuing popularity of 2D gaming on newer consoles.
Jazz Jackrabbit 2 (Epic MegaGames, 1998) - First online platformer.
Spyro the Dragon (Insomniac, 1998).
Banjo-Kazooie (Rare, 1998) - Introduced the paired videogame protagonist.
Sonic Adventure (Sega, 1999) - Successfully brought Sonic into 3D.
Prince of Persia 3D - (Red Orb Entertainment, 1999) - Transferred Prince of Persia into 3D. Did not fare terribly well; mostly eclipsed by Sands of Time.
American McGee's Alice (Rogue Entertainment, 2000) - Possibly first dark platformer or "M" rated platformer.

Conker's Bad Fur Day (Rare, 2001) - One of the first adult-aimed platformers, also one of the first games to combine platforming and third-person shooting.
Jak and Daxter: The Precursor Legacy (Naughty Dog, 2001) - First completely free-roaming game where there are no levels or loading screens.
Super Mario Sunshine (Nintendo, 2002).
Sly Cooper and the Thievius Raccoonus (Sucker Punch, 2002). The first platform game to use cel-shaded graphics.
Prince of Persia: Sands of Time - (Ubisoft, 2003) - Considered to be the true 3D successor of the Prince of Persia series. It is known for having the elements of an action/adventure while keeping true to its platformer roots. It is also credited for its unique gameplay feature that allows the player to manipulate time within the game.
Psychonauts (Majesco, 2005) - Game by Tim Schafer, considered the best multi-console platform game in sixth generation era.

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Computer Puzzle Games

Computer puzzle game is a genre of computer games that emphasize puzzle solving. The types of puzzles involved can involve logic, strategy, pattern recognition, sequence solving, word completion or, in some cases, just pure luck.

Before there ever were video games (as we would recognise them) there were jigsaw puzzles and the Rubik's Cube, today's puzzle game forefathers. The genre can be difficult to describe: the gameplay is usually abstract (but not always) often involving arranging geometric shapes to fulfill some goal or constraint. Often edge matching or colour matching plays an important role. Puzzle games usually strive to have a pick-up-and-play accessibility to them and to have an addictive quality.

Some puzzle games feed the player a random assortment of blocks or pieces that they must organize in the correct manner (Tetris, Lumines), where others present a preset game board and/or pieces and challenge the player to solve the puzzle by achieving a goal (Bomberman, The Incredible Machine). Some of the games in the former category have a mode that plays like the latter. For example, in both Tetrisphere and Tetris Attack, there is an actual "puzzle mode" in which the player must clear a pre-defined board within a certain amount of moves.

Some games are not advertised as puzzle games, yet contain many puzzle elements, such as the Resident Evil series.

Puzzle games are relatively easy to develop and to take from dedicated arcade units, to home video game consoles, to personal digital assistants and mobile phones.

Tetris

Tetris is widely regarded as the pinnacle of this genre, despite not having any real advertising nor a cute character to garner attention. Solitaire and Minesweeper are worth mentioning because of the huge installed user base (they come bundled with the Microsoft Windows operating system).

Tetris is also believed to have spawned the *versus-puzzle* genre. The screen is typically split vertically in two separate playarea's, and two (or sometimes more) players compete against each other. When one player performs a well-played move or a chain or combo, the other player is obstructed with extra blocks or blockades. Good examples are Puyo Puyo, Puzzle Bobble or Tetris Attack.

See also

- List of computer puzzle games
- Video game

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List of Computer Puzzle Games

This is a partial **list of puzzle-based computer games and video games**, sorted by general category.

Visual matching

Tetris (the game that started the genre)
Bejeweled (aka Diamond Mine)
Biniax
BOXit
BrickShooter
Chainz
Collapse
Columns

Devet
Dr. Mario
Gorby's Pipeline (for MSX and NES)
Hatris
Magic Jewelry (Columns-clone for NES)
Klax
Lines (aka ColorLines)
Lumines
Magical Drop
Meteos
Money Puzzle Exchanger (aka Money Idol Exchanger)
Panel de Pon (aka Tetris Attack and Pokémon Puzzle League)
Puzzle Bobble (aka Bust-a-Move)
Puyo Puyo (aka Kirby's Avalanche or Dr. Robotnik's Mean Bean Machine)
SameGame
Snood
Squarez
Squarez Deluxe
Picross
Super Puzzle Fighter II Turbo
Tetris 2 (aka Tetris Flash)
Uo Poko
Wario's Woods
Welltris
Wordtris
Yoshi
Yoshi's Cookie
Zoop

Maze/obstacle course navigation

Abashera
Atomix (for C64, Amiga, PC etc.)
Bomberman
ChuChu Rocket!
Marble Drop
Marble Madness
Mercury
Pac-Man series (Ms. Pac-Man et al.)
Polarium
Rush Hour
Sokoban

Theseus and the Minotaur

Hidden object

Black Box (game)
Minesweeper
MineSweeper3D

Single character control

Bombuzal
Eggerland series
Krusty's Fun House
Oddworld series
Professor Fizzwizzle
Pushover
Repton
Deadly Rooms of Death

Multiple character control

Gobliiins!
Lemmings
The Lost Vikings
Pingus
Pitman (aka Power Paws) for the Gameboy
Bridge Builder
The Incredible Machine
Picross (aka Mario's Picross)
Pipe Dream

Multiple puzzle types

Are We There Yet?
The Fool's Errand
WarioWare, Inc.

Collections

1001 Lines
Microsoft Entertainment Pack
Zillions of Games

Other

Cuyo
Mr Driller
Seven Seas
Shanghai solitaire
Snakes

See also

- Adventure game

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Dating Simulations

Dating simulations are a genre of computer and video games, usually Japanese, with romantic elements. Contrary to popular Western misconception, a very small percentage of them are tied to anime titles, though some do exist, such as Tokimeki Memorial, Angelique, Sotsugyou M, and Chobits.

Some dating sims have been imported to the United States by companies such as JAST USA and G-Collections; however most never leave Japan, at least not as official releases.

Technical definition

Dating Sim is a simulation game where one role plays, usually as yourself though picking a fictional character is common, and acheiving certain objectives. The most common are to date women, (usually more than one) and to acheive a high level relationship with them within a certain time limit. You usually must raise cash by either working jobs, or other activities. Atrributes also play a major role. These can be increased by doing various tasks. All these activities take time and games of this genre usually have realisitc times to them. A good place to see many examples of Dating Sims is at Newgrounds.

Technically, the term "dating sim" refers to a narrow group of games such as Tokimeki Memorial that offer virtual dating and simulation game features. However, in practice the term "dating sim" applies to any sort of romantic anime game, including those which might be specified as ren'ai games or bishoujo games by some fans.

Characteristics

DMkyksei (*Classmates*) established the basic conventions for dating sims in 1992. In a typical dating sim, the player controls a male avatar surrounded by female characters. The gameplay involves conversing with a selection of artificial intelligence-controlled girls, attempting to increase their internal "love meter" through correct choices of dialogue. The game lasts for a fixed period of game time, such as one month or three years. When the game ends, the player either loses the game if he failed to properly win over any of the girls, or "finishes" one of the girls, often by having sex with her or achieving eternal love. This gives the games more replay value than some other game genres, since the player can focus on a different girl each time, trying to get a different ending.

Many titles also exist where the player character is female and potential objects of affection are male-Angelique, Harukanaru Toki no Naka De, La Corda D'Oro, Kimagure Strawberry Cafe, and Tokimeki Memorial Girl's Side are just a few-this genre is known as GxB. Also of note is the BL genre. While fewer in number, there are also female/female (GxG) titles and titles with no specific gender lines ("all pairings") in existence.

There are many variations on this theme: high-school romances are the most common, but a dating sim may also take place in a fantasy setting and involve such challenges as defending your girl from monsters. Dating sims, as their name suggests, generally strive for a romantic atmosphere.

Popular dating sims

Angelique
Kana Imouto
McKenzie & Co.
To Heart
Tokimeki Memorial

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Halo

The ***Halo*** series is a popular series of video games developed by Bungie Studios and published by Microsoft.

Video games

Halo was the most popular application for the Xbox console up until the release of its more ambitious sequel, Halo 2.

Halo: Combat Evolved

When *Halo* began development, it was a real time strategy game that would have been released on Apple and Windows PCs. However, during its many years of development, it changed into a third person shooter and then to a first person shooter. Bungie was then bought by Microsoft, and Halo was converted to being developed for the Xbox game console. The game was released on November 15, 2001. It was later ported to both Microsoft Windows and Mac OS X computers.

The story deals with the adventures of the protagonist, referred to in the game only as "Master Chief", on a ring-shaped structure, called Halo. Stranded with the rest of the crew of the human ship Pillar of Autumn, including the AI Cortana, he fights against The Covenant (an alien alliance waging a 'holy war' of sorts against humanity) while attempting to uncover the ring's secrets, which include the sinister parasitic lifeforms known as The Flood. After learning that the ring is a weapon that would destroy all sentient life in the galaxy if activated, Master Chief embarks on a mission to destroy it.

Halo ends with the Master Chief and Cortana destroying the alien ring.

Halo: Custom Edition

Halo: Custom Edition (commonly known as Halo CE) is a free stand-alone expansion for Halo: Combat Evolved (for the PC) that has the ability to load and play user-created content and maps. This version does not have the option to play in campaign mode. During an online match, other players without a custom player created map can play too.

Halo 2

Halo 2 was released exclusively for the Xbox on November 9, 2004, generating a $125 million dollar entertainment record on its premiere day. The sequel features new game mechanics such as dual wielding, new vehicles and weapons, better AI, the ability to hijack vehicles, and Internet-based multiplayer via Xbox Live. It has an advanced graphics engine that utilizes normal mapping and bloom effects, helping to make it one of the best looking games on the Xbox. It also has Bungie.net integration and rankings and tracking of every online match, pushing the envelope of online console gaming further. No ports to other platforms have been announced so far.

In *Halo 2*, Master Chief battles the Covenant on Earth and later continues the fight on a second Halo: Delta Halo. Meanwhile, the Covenant slides into civil war and a disgraced Elite commander known as the Arbiter is introduced to the series as a second playable character. In the end, the second Halo is almost fired, but the Arbiter and Miranda Keyes, with the help of Sergeant Johnson, are able to prevent this occurrence. The aborted countdown in response triggers a fail-safe protocol that allows remote firing of all the other ring-worlds from one place: The Ark. The Halo universe expands as well, with new worlds and characters being introduced, as well a deeper look at the culture and society of Covenant. The cliffhanger ending suggests that another sequel is in the works.

Halo 2 is much more ambitious than its predecessor. There is heated debate over whether the game is superior to its predecessor. Arguments are mainly directed at the multiplayer aspect of the two games, with emphasis placed on Halo 2's greatly simplified learning curve and controversial matchmaking modes.

Future Video Game Releases

Halo 3

The cliffhanger ending of Halo 2, as well as the success of the Halo franchise, makes a sequel extremely likely. It is speculated that Halo will become a trilogy, after which Bungie may be done with the series. Sources from inside both Microsoft and Bungie have made contradictory claims regarding whether *Halo 3* is currently in development.

Steve Ballmer, the CEO of Microsoft, was quoted as saying that Halo 3 was in development alongside Halo 2; however, this quote was recognized as a slip of the tongue and debunked before the release of Halo 2. Bill Gates, Microsoft's chairman, stated in a May 2005 Time Magazine interview that *Halo 3* would be released in the "second wave" of Xbox 360 titles in 2006, as close to the PlayStation 3's launch as possible, to divert sales. "It's perfect," Gates said, "The day Sony launches [the new PlayStation], and they walk right into Halo 3."(Time.com article, registration required; relevant quotes on Gamespot.com). When asked shortly afterwards however, Microsoft senior vice president Robbie Bach was less definite, saying: "We haven't announced anything on what Bungie is doing or where we're going with the future of the 'Halo' franchise... With all respect to Bill, I don't run Bungie's studio, and neither does he. We'll work with the Bungie guys and let people know [when they have something to announce]".

Bungie has not denied that another *Halo* game is in progress, but they have not officially announced the game. However, the studio is known for being highly secretive and even occasionally misleading regarding development of their games. Bungie has recently made regular references to "our next project" in their website's weekly news updates. Though no official statements have been made regarding what that next game is, most believe it is indeed *Halo 3,* and that Bungie is just being coy about the project in typical Bungie fashion. Bungie has also recently stated that *Sapien* and *Guerilla,* custom-made programming tools used to build *Halo* and *Halo 2,* are being worked on.

An article in Game Informer in November 2005 reports that: "Halo developer Bungie is so paranoid about the storyline for *Halo 3* leaking out that two different storylines are being worked on so that even the company's employees are in the dark as to the plot of the game."

An alternative possibility is that, following the precedent of *Marathon Infinity*, either an outside agency or a contractor to Bungie is developing the content of *Halo 3* and using the existing engine, or possibly porting the engine to the Xbox 360. This view would reconcile Bungie's statement that the studio is not developing it and Microsoft's statements that the game will be released. Wideload Games has been suggested by fans as a potential such outside developer, reasoning that the third Marathon game was developed by a company which was, like Wideload, founded by former Bungie employees.

Soon after the Xbox 360 was unveiled in May 2005, EB Games and FYE started taking pre-orders for "Halo 3", despite having no official word from Bungie on whether they would make another Halo game. The pre-order page has since been taken down, but other retailers have followed suit.

Possible Events for Halo 3:

- The Master Chief and Truth face off in "The Ark". In early storyboards, Master Chief and a character called "Dervish" (an

early name for the Arbiter) were to both be present at the Ark.
- Sgt. Johnson, Captain Miranda Keyes, and the Arbiter escape from Delta Halo.
- Cortana has talks with the Gravemind. This will show either Gravemind's side in the war, or another hint at Cortana's rampancy.
- The outcome of Earth's biggest battle will be revealed as the Master Chief arrives hidden in Truth's ship to see Earth near the brink of defeat.
- The civil war between the two Covenant factions (Hunters, Elites, and Grunts vs. Prophets, Brutes, Jackals, and Drones) will reach its zenith.
- Secrets behind the origin of the Gravemind are revealed.
- The plot tie-in with another Bungie game, *Marathon Infinity*, may happen.
- Ongoing battles with the Flood after escaping Delta Halo in Halo 2. May result in activation of Halo's systems (by the other monitors) to control flood outbreak.

Halo Gizmondo/mobile

A Halo mobile game was announced for cellular phones, while strong rumors of the deal between Tiger Telematics and Microsoft, which will make 5 games for the system, the rumor states the possibility of the contract outlining a Halo. Bungie, to this point, has denied a Gizmondo Halo, but it may still be pending, seeing how Microsoft controls the contract, not Bungie.

Possible influences

Some fans believe *Halo* and *Halo 2* were influenced by a number of other games and pop culture references. These include StarCraft, the Alien and Predator movies, the Marathon series, and Larry Niven's Known Space universe. No comment has been made about these possible influences by the developer and these ideas are only speculation. The marines bear a striking resemblance to soldiers in the film Wing Commander.

Marathon

A number of weapons and plot devices seem to borrow from ideas seen in the Marathon series of first person shooters made by Bungie in the early to mid-1990s.

These include the concept of MJOLNIR "cyborgs," the supersoldier main character, the weapons, artificial intelligences, and even some of the alien creatures. Upon close inspection, crew members of the *Pillar of the Autumn* have the Marathon symbol on their uniforms, and the symbol is even embedded in the Halo logo itself. The Elites from *Halo* are somewhat similar (in their role, not their appearance) to *Marathon*'s Pfhor. Hunters appear in both games filling the same roles. The Hunters from *Halo*, though much larger, also clearly share design elements with the Hunters from *Marathon*. A type of alien that was modeled for *Halo 2* but later cut is nearly identical to the Drinniol from *Marathon*. Also, both games use uniform color to differentiate between different ranks of aliens (and crew members), with higher ranks being stronger and harder to kill. There are two multiplayer gaming options, a version of king of the hill and a game called Oddball (called "Kill the Man with the Ball" in Marathon), which are present in Marathon's multiplayer mode.

These large similarities led to early speculation that *Halo* took place in the same universe as *Marathon*, only with different time frames - however, this was later proved highly unlikely. According to both the Halo video games and books, the events in Halo coincide with the events in Marathon. However, due to technology differences (the lack of transporter technology in Halo, for one), this is impossible. It is possible that Halo is the Universe that formed after the Marathon universe collapsed (the very thing Durandal was trying to escape). However, on Bungie's own Marathon page, there is a Q&A which states, "Is Marathon the prequel to Halo? [...] No, Marathon is a separate story, with wholly different characters, story and gameplay." [1].

Films

Some film parallels in the games have been pointed out by various people. For instance, the Active Camouflage power-up is very similar to the type of camouflage used by the alien Predator in the Predator film series. The shape of the Elites' heads is similar in shape to the creatures in the Alien filmseries and have mouth parts similar to the Predators'. The Flood Spores share a similar purpose with the Face Huggers in the Alien film series (impregnating its host with a parasitic organism). Also, there are numerous similarities between the marines of Halo and those of Aliens. The colonial marines' dropship resembles a Pelican and the Pelican pilot Foe Hammer is based on the dropship pilot from Aliens (1986 film). Also *Halo*'s Sergeant Johnson is very strongly based on Aliens's Sergeant Apone - both are very enthusiastic, black, cigar-smoking squad leaders. Both characters even use the line "They're not paying us by the hour, marines!"

A film adaptation of the game, with Peter Jackson as executive producer, is expected to be released in 2007.

Known Space

Ringworld is a megastructure 95 million miles in radius that resembles the Halo installations, albeit on an enormously large scale. This idea has been copied numerous times in science fiction, although normally on a larger scale than in Halo. In both Halo and Known Space, humans develop space travel on their own and later encounter a hostile and technologically superior alien civilization.

The Culture

Alternatively, it's possible (or even likely) that "Halo" was inspired by the Orbitals featuring in The Culture novels by Iain M. Banks, as they are ring-shaped megastructures that orbit stars or gas giants, rather than rotate around them. These smaller structures have the advantage of not needing additional machinery to generate a day/night cycle. Furthering this theory is the fact that the Covenant resemble in no small measure the Idiran race, religious zealots bent on eradicating The Culture, which they regard as heretical.

Other Science Fiction

Halo seems to be inspired by a number of other science fiction books, particularly Ender's Game. The Drones that appear in *Halo 2* resemble the "Buggers" from *Ender's Game*, and, in the third level, are referred to by Sgt. Johnson as "Buggies, heading over the rooftops!" There are numerous other references and links, such as the Spartan program, which closely mirrors the super soldier program from the novel. From reading Ender's Game, one would notice a plethora of other small similarities, from the fleets, down to the alien species. Another novel that this resembles is the novel, *Starship Troopers*

Starhammer, written by Christopher Rowley, it details the story of a genetically altered man who escapes slavery by a race of blue overlords, and finds an ancient weapon that was created by an ancient race to destroy a parasitic alien life form than may have been a partial basis for the Flood.

Common culture

Halo uses a number of common plot devices, although often they are not immediately apparent.

- The main character has few lines and is accompanied by a technically adept sidekick.
- People searching for valuable objects instead release something evil.
- The main character is saved by someone who later betrays him.
- The only way to defeat an enemy is to blow up the world (or *Halo*, in this case). This plot device also drives the plot involving the Flood and the true purpose of the ring-worlds.

Other

Master Chief

Master Chief's true name is John, and his surname has never been revealed. His birth name was effectively erased, and so he is known by his rank of Master Chief or Spartan-117. This rank roughly corresponds to the modern rank Master Chief Petty Officer of the United States Navy in the 21st century. In the Halo universe, Master Chief and the entire SPARTAN project are under the command of the United Nations Space Command Navy. Master Chief is also known as a "Demon" to the Covenant.

He was taken from his home world Eridanus II as a child and brought up in the military's Spartan II program on the planet Reach (Epsilon Eridani) (resulting in his other designation, Spartan-117) to be a super soldier. The SPARTANs were originally created to bolster the UNSC's own defenses against piracy and other issues, and the program was redirected when the Human-Covenant war began. The Spartan II project was headed by Dr.Catherine Halsey.

Master Chief's status as a cyborg has been hotly debated by fans-mostly through confusion on what exactly a cyborg is. The Spartan II program augmented its soldiers through genetic enginering, thyroid implants, bone strengthening through impregnation, and eventually neural jacks as part of the upgrades necessary to don the MJOLNIR armor, in addition to other measures. Bungie's own statements identify Master Chief as being a cyborg (down to dialogue from the Covenant Grunts), in addition to comparisons between Master Chief and the military cyborgs from Bungie's earlier game series Marathon. Master Chief is entirely Human in appearance, as his armor is in no way permanently attached. Despite this, he would certainly not be average by any Human measure. Candidates for the SPARTAN-II program were chosen for natural genetic superiority, and thus were naturally taller, stronger, smarter, and faster than most humans even before augmentation. Chief's genetic, chemical, and otherwise unnatural enhancements do qualify him for "cyborg" status- at least loosely.

Novels

Three licensed novels based on the Halo series have been published: Halo: The Fall of Reach, Halo: The Flood, and Halo: First Strike. The Fall of Reach leads up to Halo: Combat Evolved, and describes how the Spartans came into being. The Flood is a novelization of Halo: Combat Evolved, while First Strike describes events that take place between Halo: Combat Evolved and Halo 2. Both the Fall of Reach and First Strike were written by Eric Nylund, while The Flood was written by William C. Dietz.

There are a number of differences between the novels and the games, most notably that there are no Spartans besides the Master Chief in the games, whereas by the end of the novel series at least 4 additional Spartans are shown to survive. Many fans had hoped more Spartans would appear in *Halo 2*, but this did not eventuate in the final release of the game, most likely due to balancing issues.

Bungie has stated more novels, possibly based on Halo 2, have been talked about but currently there is nothing to suggest who is writing them or when they will be published.

Nonfiction Books

- Halo (Xbox and PC)
  - *Halo: Prima's Official Strategy Guide* by Mario De Govia, Brandon Smith, Damien Waples, Prima Development
  - *Halo: Combat Evolved: Sybex Official Strategies & Secrets* by Doug Radcliffe
  - *The Black Art of Halo Mods* by Stephen Cawood

- Halo 2
  - *Halo 2: The Official Game Guide* by Piggyback Interactive
  - *The Unauthorized Halo 2 Battle Guide: Advanced Combat Techniques* by Stephen Cawood
  - *The Art of Halo* by Eric S. Trautmann
  - *Secrets Of Halo 2* by Greg Orlando, Russell Garbutt
  - *Halo 2 Hacks: Tips & Tools for Finishing the Fight* by

Fan Fiction

A large body of fan fiction based on the Halo series has been written, covering both the past and future of the setting. The sites bungie.net and halo.bungie.orgboth host collections of Halo fan fiction. Indeed, there are several works of fan fiction that run to the length of a novel or more, and are well-known among the Halo community. Fanfiction authors like Mr_Clark, Scorptank, soulguard, and sir_brilliant garner no small amount of prestige as some of the more famous writers of the Halo community. Additionally, fanfiction.net hosts a selection of Halo inspired fiction whose numbers (as of december 2005) have just crept over 1000.

The Haunted Apiary

The Haunted Apiary (aka *I Love Bees*) was an alternate reality game used to promote the release of *Halo 2*.

Halo Machinima

Red vs Blue, a production of Rooster Teeth, is a machinima series based on the Halo universe. Virtually all of the footage of the series is taken from Halo and Halo 2 gameplay. Red vs Blue chronicles the Civil War that supposedly ensues between differing human factions in the time between the two Bungie games, specifically the story of the men and a woman (Tex) posted at both armies' outposts at Blood Gulch, a dried creek bed in the middle of nowhere. Not Halo canon, the series is largely comical in nature and can be found at RedvsBlue.com. Other machinima have been created, ranging from the like minded Fire Team Charlie to the sharply contrasting The Codex, a more serious series.

Time Magazine

Recently, the creators of *Halo* were listed in Time's 100 most influential figures of the past year. This is due to the reason that *Halo* manages to appeal to both casual and hardcore gamers, and broke sales records, making gaming more mainstream entertainment.

Dead or Alive 4

A female SPARTAN character, SPARTAN-458 (Nicole), has been announced to appear in the fighting game Dead or Alive 4 as an unlockable character, along with a Halo-themed environment as an unlockable stage. This is the result of a collaborative effort between Bungie and Tecmo's Team Ninja.

Nicole was born in the year 2531 in the city of New Legaspi on Mars. At six years of age she was abducted by the Office of Naval Intelligence and conscripted into the SPARTAN-II program. The SPARTAN-II program was the UNSC's highly successful military project to augment and hone perfect soldiers.

SPARTAN-458's unit was preparing for a classified mission on Nassau Station when the ONI stealth ship Apocalypso (*see I Love Bees*) tumbled into real-space – being carried along in the wake of a freak slipspace anomaly. The anomaly intersected Nassau Station; creating a semi-stable "bubble" in the space/time continuum on its way back to the 21st Century.

For the time being Nicole-458 is trapped in the 21st century; guarding Nassau Station's secrets with all but lethal force (she realizes killing someone in the past could have dire consequences), waiting for the "bubble" to collapse and hopefully returning her to the year 2552.

It should be noted that the Halo novels state that 150 children were selected for the SPARTAN-II program, and that only 75 successfully completed the augmentation process to become fully-capable SPARTANS (the rest died or were crippled by the side effects). Since they were sequentially numbered, all SPARTAN-II soldiers should have numbers ranging from 001 to 150. There should, according to previously established canon, not be a SPARTAN-458.

Music

Two soundtracks, both composed by Martin O'Donnell, have been released based on the Halo game series :

- Halo : Original Soundtrack
- Halo2, Vol.1 : Original Soundtrack
-

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Interactive Fiction

Interactive fiction, often abbreviated **IF**, describes software containing simulated environments in which players use text commands to control characters. Works in this form can be understood as literary narratives and as computer games. In common usage, the word refers to **text adventures**, a type of adventure game with text-based input and output. The term is sometimes used to encompass the entirety of the medium, but is also sometimes used to distinguish games produced by the interactive fiction community from those created by games companies. It can also be used to disambiguate the more modern style of such works, focusing on narrative, from the more traditional focus on puzzles. More expansive definitions of interactive fiction may refer to all adventure games, including wholly graphical adventures such as *Myst*.

Today, interactive fiction no longer appears to be commercially viable, but a constant stream of new works is produced by an online interactive fiction community, using freely available development systems. Most of these games can be downloaded for free from the Interactive Fiction Archive.

Since 1995 there has been an annual Interactive Fiction Competition for relatively short works. There are also annual XYZZY Awards given out in various categories, modelled on the Academy Awards. Another annual competition, the Spring Thing, has been held since 2001 to highlight works considered to be too long for the Interactive Fiction Competition.

The medium of interactive fiction

Text adventures are one of the oldest types of computer games and form a subset of the adventure genre. The player uses text input to control the game and the game state is relayed to the player via text output.

Input is usually provided by the player in the form of simple sentences such as "get key" or "go east" which may be handled by a simple parser. Parsers vary in sophistication; the first text adventure parsers could only handle two-word sentences in the form of verb-noun pairs. Later parsers could handle increasing levels of complexity from sentences such as "open the red box with the green key then go north". This level of complexity is the standard for works of interactive fiction today.

Works of interactive fiction function like single-player Multi-User Dungeons or 'MUDs', and the original MUD was actually a multi-player generalization of *Zork* (one version of which was called *Dungeon*). MUDs, which became popular in the mid-1980s, rely on a textual exchange and accept similar commands from players as do works of IF, but the social aspects and the communities of players who participate are often the most important features of MUDs.

Interactive fiction usually relies on reading from a screen and on typing input, although speech synthesis allows blind and visually impaired users to play interactive fiction.

History

Adventure

Around 1975 [1], Will Crowther wrote the first text adventure game, Adventure (originally called ADVENT because a filename could only be six characters long in its operating system, and later Colossal Cave). It was programmed in Fortran for the PDP-10. In 1976, Don Woods discovered Adventure while working at the Stanford Artificial Intelligence Lab, and obtained Crowther's permission to expand the game. Crowther's original version was more or less realistic; Woods' changes were reminiscent of the writings of J.R.R. Tolkien, and included a troll, elves, and a volcano inspired by Mount Doom.

In 1976, the game began spreading on ARPANet, and has survived on the Internet to this day. The game has since been ported to many other operating systems.

The popularity of *Adventure* led to the wide success of interactive fiction during the late 1970s and the 1980s, when home computers had little, if any, graphics capability.

The commercial era

Infocom

In the United States, the best-known company producing works of interactive fiction was Infocom, which created the Zork series and many other titles; among them Trinity, The Hitchhiker's Guide to the Galaxy and A Mind Forever Voyaging.

In June of 1977, Marc Blank, Bruce K. Daniels, Tim Anderson, and Dave Lebling began writing the mainframe version of Zork (also known as Dungeon), at the MIT Laboratory for Computer Science. The game was programmed in a computer language called MDL, a variant of LISP. In early 1979, the game was completed. Ten members of the MIT Dynamics Modelling Group went on to join Infocom when it was incorporated later that year.

In order to make its games as portable as possible, Infocom developed the Z-Machine, a custom virtual machine which could be implemented on a large number of platforms, and which took standardized "story files" as input.

Infocom's games were popular for many years, but the company was bought by Activision in 1986 after the failure of Cornerstone, its database software program, and stopped producing text adventures a few years later.

Infocom's games are now considered the classics of the genre, and the period in which it was active is thought of as the first golden age of interactive fiction. In 1991 and 1992, Activision released volumes one and two of The Lost Treasures of Infocom, a collection containing most of Infocom's games.

Adventure International

Adventure International was founded by Scott Adams (not the creator of Dilbert).

In 1978, Adams wrote Adventureland, which was loosely patterned after the original Advent. He took out a small ad in a computer magazine in order to promote and sell Adventureland, thus creating the first commercial adventure game. In 1979 he founded Adventure International, the first commercial publisher of interactive fiction. The company went bankrupt in 1985.

Legend Entertainment

Legend Entertainment was founded by Bob Bates and Mike Verdu in 1989. It started out from the ashes of Infocom.

Their text adventures used (hi-res) graphics as well as sound, but were still "true" text adventures. In many areas, the parser was better than the one used by Infocom. Among their better-known titles are Eric the Unready, the Spellcasting series and Gateway (based on Frederik Pohl's novels).

The last text adventure created by Legend was Gateway II, while the last game ever was Unreal 2 (the well-known first person shooter action game). Legend was shut down in 2004 by Atari.

Other companies

Probably the first commercial work of interactive fiction produced outside the U.S. was the dungeon crawl game of Acheton, produced in Cambridge, England, by Topologika. Other leading companies in the U.K. were Magnetic Scrolls and Level 9. Also worthy of mention are Delta 4, Acornsoft, Melbourne House, and the homebrew company

Zenobi.

In Japan, companies such as Data West developed limited interactive fiction games, such as the seven-volume murder mystery series Misty.[2] Later, interactive fiction became more popular in Japan in the form of visual novels.

The modern era

After the demise of the commercial interactive fiction market, an online community eventually formed around the medium. In 1987, the Usenet newsgroup `rec.arts.int-fiction` was created (focusing on *creating* interactive fiction), and was soon followed by `rec.games.int-fiction` (which focuses on *playing* interactive fiction games).

One of the most important early developments was the reverse-engineering of Infocom's Z-Code format and Z-Machine virtual machine by the InfoTaskForce, a group of enthusiasts, in 1987, and the subsequent development of an interpreter for Z-Code story files. As a result, it became possible to play Infocom's work on modern computers.

For years amateurs formed a small community producing interactive fiction works of relatively limited scope using the Adventure Game Toolkit and similar tools. The breakthrough that allowed the interactive fiction community to truly prosper, however, was the creation and distribution of two sophisticated development systems. In 1987, Michael J. Roberts released TADS, a programming language designed to produce works of interactive fiction. In 1993, Graham Nelson released Inform, a programming language and set of libraries which compiled to a Z-Code story file. Each of these systems allowed anyone with sufficient time and dedication to create a game, and caused a growth boom in the online interactive fiction community.

Today, the games created by enthusiasts of the genre regularly surpass the quality of the original Infocom games, and a number of yearly competitions and awards are given out to the best games in the field, among them the annual Interactive Fiction Competition for short works, the newer Spring Thing for longer works, and the XYZZY Awards. Newer games, such as Photopia and So Far, have further increased the vitality of the interactive fiction genre.

Also, on Adult Swim's website, a Flash text adventure based on Harvey Birdman, Attorney at Law is currently featured, under the name of Habeas Dorkus.

Notable works of interactive fiction

Colossal Cave Adventure by Will Crowther and Don Woods was the first text adventure ever made.

The Zork series by Infocom (1979-) was the first text adventure to see widespread release.

The Hobbit by Philip Mitchell and Veronika Megler of Beam Software (1982)

The Hitchhiker's Guide to the Galaxy, by Douglas Adams and Steve Meretzky of Infocom (1984)

A Mind Forever Voyaging, by Steve Meretzky of Infocom (1985), first story-heavy, puzzle-light game.

Amnesia, by Hugo Award and Nebula Award winning science fiction and fantasy author Thomas M. Disch (1987), the only text adventure ever published by Electronic Arts.

Curses, by Graham Nelson (1993), the first game ever written in the Inform programming language, and a classic in its own right. Considered one of the first "modern" games to meet the high standards set by Infocom's best titles.

So Far, by Andrew Plotkin (1996) is considered by many to be a modern benchmark for its integration of story and puzzle design.

Photopia, by Adam Cadre (1998), the first almost entirely puzzle-free game. Initially highly controversial.

Galatea, by Emily Short (2000). Galatea is focused entirely on interaction with the animated statue of the same name. Galatea has one of the most complex interaction systems for a non-player character in an interactive fiction game.

Sample transcript

This is a brief transcript from one of many possible ways to not win the game Curses, by Graham Nelson. The player has entered instructions on the lines beginning with '>' (shown here in italic); the rest of the text is printed by the computer. The computer begins with a printed introduction giving a little context to the game (much more would become apparent as the game progressed):

```
It's become a matter of pride now not to give up.
That tourist map of Paris must be up here somewhere
in all this clutter, even if it has been five years
since your last trip. And it's your own fault. It
looks as if your great-grandfather was the last
person to tidy up these lofts... CURSES An
```

```
Interactive Diversion Copyright (c) 1993 by Graham
Nelson. New players should type "help". Release 8 /
Serial number 930603 (Compiled by Inform v634) Attic
The attics, full of low beams and awkward angles,
begin here in a relatively tidy area which extends
north, south and east. The wooden floorboards seem
fairly sound, just as well considering how heavy all
these teachests are. But the old wiring went years
ago, and there's no electric light. A hinged
trapdoor in the floor stands open, and light streams
in from below. >inventory You are carrying: a
chocolate biscuit an electric torch (providing light
and closed) a crumpled piece of paper >read paper
Things to do: 1. Find map 2. Phone airport to check
parking 3. Health forms... and so on. Let's face it,
1. is more enticing than the rest put together.
>enter trapdoor Yes, probably just as well to give
up looking, and heaven knows there's enough packing
to do, what with the rest of the family in uproar.
Oh well. *** You have missed the point entirely ***
In that game you scored 0 out of a possible 550, in
3 turns, giving you the rank of hapless Tourist.
Would you like to RESTART, RESTORE a saved game,
give the FULL score for that game or QUIT? >
```

Interactive fiction development systems

A number of systems are available today to write interactive fiction.

ADRIFT
Alan
Inform
Hugo
Olitext
TADS
T.A.G. (German)
InformATE (Spanish)
Superglús (Spanish)

The majority of recent IF development use Inform, TADS, or ADRIFT. In the 2005 IFComp, the entered games consisted of: [3]

Z-Code (Inform VM): 17
TADS 2: 6

ADRIFT: 5
Glulx (A second Inform VM): 2
TADS 3: 1
ALAN: 1
HUGO: 1
Windows executable: 3

While familiarity with a programming language leads many new authors to attempt to produce their own complete IF application, most established IF authors recommend use of a specialised IF language, arguing that such systems allow authors to avoid the technicalities of producing a full featured parser, while allowing broad community support. The choice of authoring system usually depends on the author's desired balance of ease of use vs power, and the portability of the final product. [4]

See also

- Roleplaying Games, which are occasionally described as another form of interactive fiction.

Alternative definitions

The term "interactive fiction" is also occasionally used to refer to hypertext fiction or collaborative fiction.

It is also used to refer to literary works that are not read in a linear fashion, but rather the reader is given choices at different points in the text; the reader's choice determines the flow and outcome of the story. The most famous example of this form of interactive fiction is the Choose Your Own Adventure book series. Examples of interactive fiction are most often found in the genres of fantasy and science fiction and aimed at young readers, but examples can also be found in more adult-oriented genres such as romantic fiction and erotica.

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Music Video Games

A **music video game**, also commonly known as a **music game**, **rhythm action game**, or **rhythm game**, is a type of video game where the gameplay is oriented almost entirely around the player's ability to follow a musical beat and stay with the rhythm of the game's soundtrack. Since the game play for this type of game is largely aural rather than visual, this type of game is similar to audio games. However, music games generally require a visual component as well.

In a music video game, the player must press specific buttons, or activate controls on a specialized game controller, in time with the game's music. The control scheme is usually fairly simplistic, and the moves required are usually pre-determined rather than randomized. More recently, music games such as Rez (2002) have attempted to move away from the traditional "Simon says" approach, attempting to give the player more freedom in the sounds they create.

Major developers

NanaOn-Sha

A Japanese video game company now known as NanaOn-Sha is credited with the creation of what is generally considered to be the first modern rhythm game, PaRappa the Rapper (1996). The gameplay generally involves repeating the rhythms of raps from another character (one per level), by pressing any of six buttons on the game controller. The button sequences are displayed on a timeline the top of the screen. The press of a button plays a corresponding sample of PaRappa's voice, regardless of whether the timing of the press or the selection of the button is correct (PaRappa can sometimes be heard to say "oops!" if no sample is associated with the button at that moment).

The game is scored for sequence and timing, and adhering exactly to the given timeline results in a passing grade. However, unlike many other music games, the player may obtain an even higher score and access a special "COOL" mode of play by "freestyling" (though the algorithm by which this is scored is often nebulous and the results virtually unpredictable).

The game's success resulted in the spinoff UmJammer Lammy (1999), which is based on guitar samples, and eventually a proper sequel (2002). NanaOn-Sha also produced another novel music game, Vib-Ribbon (1999), but released the game only in Japan and Europe.

BEMANI (née Konami g.m.d)

An extremely popular series of games published by Konami in Japan make up a significant proportion of the genre, and are known as the "BEMANI series", after the company's music games division. The series is named, in a common Japanese syllabic abbreviation, after its flagship game, beatmania (1997), in which a player uses a set of buttons and a controller in the form of a DJ's turntable. The series also includes several games based on controllers shaped like musical instruments, such as GuitarFreaks (1998) and DrumMania (1999).

Only a limited selection of the BEMANI games have been released outside of Asia, the most notable definitely being Dance Dance Revolution (1998) (also known as Dancing Stage in European release), in which players, in time with an on-screen sequence, step on or otherwise activate panels on a large (about 1 meter square) floor controller which in home versions somewhat resembles the Nintendo Power Pad accessory. The overwhelming success of DDR and its sequels has spawned numerous re-creations of the game or its mechanics, both commercial (Pump It Up, EZ2Dancer) and free (including StepMania, which is also FOSS, and Dance With Intensity, which is not), making it possibly the most duplicated music game in existence.

The BEMANI series can be credited with several trends in music games. One is the use of novel, specialized game controllers, in both arcade and home versions (which Konami has also pioneered in non-music games such as *Police 911*). Another is a basis on a sizeable catalog of short mixes and covers of existing songs as well as songs produced in-house for the game. Most or all games in the series have (often multiple) sequels in which the mechanics of the game vary little from the original and the main change is the selection of songs.

Harmonix

An American game company called Harmonix makes primarily music games, and is famous for the game FreQuency (2001) and its sequel Amplitude (2003), both of which feature edits of existing songs (as well as original selections) and a gameplay similar to that of *beatmania*.

Harmonix also produced Karaoke Revolution (2003) (published by Konami as a BEMANI game), in which a player sings along to background music and on-screen lyrics (in the style of karaoke) into a microphone and scored on correct pitch.

A new (as of November 2005) game by Harmonix called Guitar Hero is extremely similar to Konami's GuitarFreaks, making use of a nearly identical guitar-shaped (but only slightly guitar-like) controller with more neck buttons.

The company was one of the first developers to make use of the EyeToy camera accessory for the PlayStation 2.

United Game Artists/Q Entertainment

Before it was absorbed by Sonic Team in 2003, SEGA's United Game Artists division, led by Tetsuya Mizuguchi, created several music games. In the month following the dissolution of UGA, Mizuguchi left SEGA along with several of his co-workers to form an independant game studio, Q Entertainment, which continues producing music-based games, along with a handful of other titles.

The first two titles produced by UGA were the Dreamcast game Space Channel 5 and its sequel (both were later re-released for the PlayStation 2). In the game, the player controls Ulala, a swingin' reporter for the titular broadcast network, Space Channel 5. Ulala defeats her enemies (which include aliens, robots, and nefarious humans) by mesmerizing them with her dancing and/or singing, then incapacitating them with her raygun. The control scheme follows a "simon says" format, with players repeating sequences of of button presses in time with the ever-present music.

The last title made by UGA before it was dissolved was Rez, a unique rail shooter for the Dreamcast and PlayStation 2. In Rez, the player flies through a psychedelic, abstract landscape while a Techno or Breakbeat track plays. Whenever the player locks on to an enemy, shoots, or uses a special ability, there is a both a musical and a visual effect which occurs in time with the playing track. The controller's vibrating motors also pulse in time with the beat. The sensory experiences offered by the game (visual, auditory, and tactile) are all intensely coordinated, and the unique play experience earned Rez many excellent reviews, although sales were lackluster.

After Mizuguchi left SEGA to form Q Entertainment, his new company produced two titles for new portable systems, Lumines for the PlayStation Portable and Meteos for the Nintendo DS. Meteos includes a largely orchestral soundtrack, but the gameplay does not center on music or rhythm, so it is outside the scope of this article.

Lumines is a puzzle game in which the goal is to arrange like-colored falling blocks into squares which will then dissappear. Like Rez, each stage in the game has a unique musical and visual theme. Unlike, for example, Tetris, blocks which are cleared do not dissappear immediately. Instead, a bar called the timeline sweeps accross the screen in time with the music and clears away the properly arranged blocks, producing a musical effect in sync with the background music each time this happens.

Finally, Q Entertainment is currently working on producing a new PSP title called Every Extend Extra. It is described as an action shooting game which will feature rhythm-oriented gameplay, music, and psychedelic graphics, much like Rez.

See also

- List of music games

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Racing Games

A **racing game** is any game that involves competing in races through a surrogate playing piece or vehicle, either getting it from one point to another or completing a number of circuits in the shortest time.

- Many board games can be said to be racing games, such as Chutes and Ladders, Cribbage or Formula Dé.
- There are also toys made for racing, like slot cars and radio controlled cars.

One of the more common uses of the term **racing game** is to describe a genre of computer and video games. Racing games are either in the first or third person perspective. They may be based on anything from real-world racing leagues to entirely fantastical settings, and feature any type of land, air, or sea vehicles. In general, they can be distributed along a spectrum anywhere between hardcore simulations, and simpler arcade racing games.

Sim racers

Simulation style racing games strive to replicate the handling of a car as it feels in the real world. They often license real cars or racing leagues, but will use fantasy cars built to resemble real ones if unable to acquire them.

Although these simulation games are specifically built for people with a high grade of driving skill it is not uncommon to find aids that can be enabled from the game menu. The most common aids are traction control (TC), anti-lock brakes, steering assistance, damage resistance, clutch assistance, automatic gearbox, etc. This softens the learning curve for the difficult handling characteristics of most racing cars.

The Formula One World Championship has a fan base all over the world and is one of the racing series with the most simulation adaptations.

Some of these racing simulators are customizable, as game fans have decoded the tracks, cars and executable files. Large internet communities have grown around the simulators regarded as the most realistic and many websites host internet championships.

Arcade racers

Arcade style racing games put fun and a fast-paced experience above all else, as cars usually fight rather than compete. They often license real cars and leagues, but are equally open to more exotic settings and vehicles. Races take place on highways, windy roads or in cities; they can be multiple-lap circuits or point-to-point, with one or multiple paths (sometimes with checkpoints), or other types of competition, like demolition derby, jumping or testing driving skills. Popular arcade racers are the Need for Speed series, the Rush series, the Burnout series and the classic OutRun.

Frequently, an arcade racer will feature unrealistic physics which allows cars to drift for hundreds of metres, jump ramps with very little starting speed and a low launch angle and to heavily shunt a rival car with only a slight nudge.

Over the last three years there has been a trend of new street racing; imitating the import scene, one can tune family cars or coupés and race on the streets. The most widely known ones are the Need for Speed Underground series, Midnight Club 3: DUB Edition, Street Racing Syndicate and Juiced.

Simulation style racing games

F1 Challenge - Formula One simulator series
PS2 Formula One (Studio Liverpool) series
Grand Prix Legends - Simulator of the 1967 F1 season
Grand Prix series: F1GP, Grand Prix 2, Grand Prix 3, Grand Prix 4 - F1 simulator series
GTR - FIA GT Racing Game - FIA GT racing game
GT Legends - 60s and 70s GT simulator
Live for Speed - online racing simulator
Motorsport - open source driving simulator
NASCAR Racing series
Racer - customizable online racing simulator
Rally Trophy
rFactor - by Image Space Incorporated (Platform for modders with

deep physics model)
Sports Car GT - also by Image Space Incorporated
Richard Burns Rally - rally simulator

Semi-simulation style racing games

These games are neither simulators nor arcade racers; they stand in the middle of the spectrum.

Colin McRae Rally series
Enthusia Professional Racing
Forza Motorsport
Gran Turismo series
TOCA Race Driver series

Arcade style racing games

Beetle Adventure Racing
Burnout series
Carmageddon series
Cruisin' series
Midnight Club series
Need for Speed series
Out Run series
Pole Position series
Project Gotham Racing series
Ridge Racer series
Rush series
Sega Rally series
PS Formula One series

Futuristic racers

F-Zero series
Wipeout series

Kart racers

Mario Kart series
Crash Nitro Kart

Arcade racing games time line

1982 Pole Position - Namco
1983 Pole Position 2 - Namco
1984 TX-1 - Atari
1986 Out Run - Sega
1987 Final Lap - Namco
1988 Chase HQ - Taito
1988 Continental Circus - Taito
1988 Hard Drivin' - Atari
1988 Power Drift - Sega
1989 Winning Run - Namco
1989 SCI - Taito (Chase HQ 2)
1989 Super Monaco Grand Prix - Sega
1991 Rad Mobile - Sega
1991 Final lap 2 - Namco
1991 F1 Exhaust Note - Sega
1992 Final Lap 3 - Namco
1992 Super Chase - Taito
1992 Virtua Racing - Sega
1993 Out runners - Sega
1993 Ridge Racer - Namco
1994 Cruis'n USA - Midway
1994 Daytona USA - Sega
1994 Sega Rally Championship - Sega
1995 Rave Racer - Namco
1996 Cruis'n World - Midway
1996 Scud Race - Sega
1996 San Francisco Rush - Atari
1998 Sega Rally 2 - Sega
1998 DaytonaUSA 2 - Sega
1999 Battle Gear - Taito
1999 Cruis'n Exotica - Midway
2000 San Francisco Rush 2049 - Atari

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Roguelike

A **roguelike** is a computer game that borrows some of the elements of another computer game, 1980's Rogue. A roguelike is a superficially two-dimensional dungeon crawling computer game, usually with simple text or ASCII "graphics" and many with "tiles" which replace the rather limited character set with a wider array.

The genre is named after *Rogue*, although some features of *Rogue* existed in earlier games, notably: Adventure (1975), Dungeon (1975 for PDP-10 mainframes), and dnd (1975, written for the PLATO system on CDC computers). Unlike *Rogue* those games all had pre-scripted scenarios that were largely the same each time they were played and which players could grow tired of, with only some random variations. In *Rogue* the dungeon is randomly regenerated each time the player begins the game, creating a new challenge each time and remaining fresh for the player.

Becoming widely available with the Berkeley Software Distribution version of Unix, *Rogue* became the most popular *dungeon crawl* game yet created.

Overview

These games present an absolutely overhead view the components of which were originally characters on a teletype. Traditionally, the hero is represented by an "@" sign, which can be seen as a head and shoulders view from above. Other characters (usually enemy monsters) are represented by letters of the alphabet. Rogue itself only made use of capital letters, but modern roguelikes utilize different capitalization of letters to represent different monsters. A dog, for example, may be represented by the letter "d", and a dragon by a "D". Also, to further distinguish various creatures, a modern roguelike game will display different colored letters. For example, a Red Dragon might be represented by a red "D", whereas a Blue Dragon might be represented by a blue "D", each with their own abilities and required strategy by the player. Further dungeon features are represented by other ASCII (or ANSI) graphics. A traditional sampling is below.

However it is becoming increasingly popular to make use of graphics in roguelikes. Numerous graphical versions are available for most of the traditional games; and it is very common for the newer roguelike projects in development to use graphics, sometimes even sound.

The hero is controlled by short commands of one or a few keypresses rather than using a mouse or typing long sentence-like commands. For example, in NetHack a player would press "r" to read a scroll, "d" to drop an item, and "q" to quaff (drink) a potion.

Though they may seem like trivial games at a first glance because of their simple graphics and interface, roguelikes usually provide a much greater gameplay detail depth than average commercial games. Instead of spending a lot of time on the graphics and 3D engines roguelike developers focus on advancing gameplay.

Roguelike games feature randomly generated dungeon levels, which give them more replay value than games in which the levels are the same every time, though many have static levels as well.

The appearance of magical items also changes randomly from game to game.

Roguelike games use a Dungeons & Dragons-like turn-based combat system instead of a real-time system.

There is a great deal of variance between different games in appearance, commands, plot, and strategy.

Most roguelikes are single-player games, due to the difficulty of extending a turn-based system to support multiple players. However, some multi-player *Rogue* derivatives such as TomeNET, MAngband, and Crossfire exist and are playable online. Also, on multi-user systems controlled by appointed administrators and having the required security features, scoreboards for single-player games are often "shared" between players playing the same rules, without the opportunity to cheat by changing the game or savefiles. Some also allow traces of former players to appear in others' games in form of ghosts or grave markings.

(It is also worthy of note that there are some modified roguelikes in existence which use party or encounter systems which greatly deviate from the normal roguelike gameplay in those regards, but still conform in many other respects.)

Traditionally in roguelike games there is something called permadeath, which means that death is final. Once a character is dead, discounting item-afforded preclusion, the player must start over from the beginning of the game. Most roguelikes provide a "save game" feature, but this is only intended to allow splitting a game across multiple sessions, and the save file will be deleted automatically when the character dies. A skilled user will usually be able to bypass this mechanism and restart after a death, but this is considered dishonorable (or cheating) by many players, and is often known as "save scumming". Some roguelikes provide a "wizard mode" which lets players explore the dungeon without risk of death, but as with save scumming, it is not possible to win honorably using wizard mode.

There are many online communities dedicated to roguelike games, most notably the *rec.games.roguelike* hierarchy on Usenet.

There also exist a few paper-based roguelikes; one is in fact called "Roguelike". "Adom the RPG" is another.

Roguelike Family Tree

Roguelikes branched in three main directions:

- The *Rogue/Hack/NetHack* school, where levels are saved after being left. Other notable examples include *Slash'EM*, *Linley's Dungeon Crawl*, and *Castle of the Winds*.
- The *Moria/Angband* school, where levels are regenerated after being left. The main occupants of this branch are *Moria*, its variants, and *Angband* and *its* variants.
- The overworld school, where there is more than one dungeon (or, in the case of *The UnReal World*, no dungeons at all (only caves)). Notable examples of this school are *Omega* (dungeons are regenerated after being left), *ADOM* (every dungeon but one is preserved when left), *ToME*, and later versions of *ZAngband*.

Note that there are other attributes that distinguish branches; for example, starvation is a major threat in the *Hack* branch of roguelikes, while in the *Moria* branch it is rare to die of starvation.

List of popular roguelikes (and other descendents of *Rogue*)

3059 (Real-time, futuristic Rogue-derivative with music and sound)
Alphaman
Ancient Domains of Mystery (ADOM)
Angband (with over sixty variants, some not actively maintained)
Avanor
Azure Dreams
Castle of the Winds
Chocobo's Mysterious Dungeon
Crossfire (Real-time game with some things in common to Rogue)
DarkStone (Roguelike-inspired Action RPG homage to Diablo)
Diablo (Roguelike-inspired Action-RPG) "playing Rogue is to playing Diablo as reading a book is to watching a movie." - Glen Wichman [1]

Doom, the RogueLike (DoomRL) Roguelike-inspired game in the world of Doom, created by Kornel Kisielewicz
dnd Dungeon crawl game written in 1974.
Dungeon Dungeon game written in 1975 at Claremont Graduate University, first documented use of line of sight dungeon maps
Dungeon Crawl (or just "Crawl")
DungeonDoom (Roguelike-inspired Doom3 modification)
The Dungeon Revealed and The Dungeon of Doom
Dweller (roguelike for mobile phones)
Flatspace (space trading and exploration game with many elements from Elite and Rogue)
GearHead (a mecha based Roguelike)
Hack
Hengband (heavily modified Angband variant)
Heroic Adventure! (also known as HA! Similar to ADOM)
Iter Vehemens ad Necem (IVAN)
Larn
The Legend of Saladir (or just "Saladir")
Lost Labyrinth
Mazzembly 1997
Mike's Adventure Game
The Minstrel's Song
Moraff's World
Moria
NetHack (A descendant of Hack)
Omega
Ragnarok
Rogue
Scarab of Ra (a unique first-person roguelike for Macintosh)
Sword of Fargoal (featuring primitive graphics and realtime combat)
Troubles of Middle Earth, or ToME (a heavily modified ZAngband variant, perhaps the closest to Tolkien in some regards)
Torneko series
Tyrant (A graphical Java roguelike)
Slash'EM ("Super Lotsa Added Stuff Hack - Extended Magic")
The UnReal World (URW)
Zangband - heavily modified Angband variant

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Serious Games

Serious games (SGs) are a type of video and computer games, similar to that of educational games, but primarily focused on an audience outside of primary or secondary education. Serious games can be of any genre, but the main goal of a serious game is not to entertain, though the potential of games to engage is often an important aspect of the choice to use games as a teaching tool. A serious game is usually a simulation which has the look and feel of a game, but is actually a simulation of real-world events or processes. The main goal of a serious game is usually to train or educate users (though it may have other purposes, such as marketing) while giving them an enjoyable experience. The fact that serious games are meant to be entertaining encourages re-use. While the largest users of SGs are the US government and medical professionals, other commercial sectors are beginning to see the benefits of such simulations and are actively seeking development of these types of tools.

Overview

Long before the term "serious game" came into wide use with the Serious Games Initiative in 2000, games were being developed for non-entertainment purposes. The continued failure of the "edutainment" space to prove profitable, plus the growing technical abilities of games to provide realistic settings, led to a re-examination of the concept of serious games in the late 1990s. During this time, a number of scholars began to examine the utility of games for other purposes, including early work by Henry Jenkins at MIT, and books such as Janet Murray's Hamlet on the Holodeck, contributed to the growing interest in applying games to new purposes. Additionally, the ability of games to contribute to training expanded at the same time with the development of multi-player gaming. In 2000, the Woodrow Wilson International Center for Scholars in Washington D.C. launched a "Serious Games Initiative" to encourage the development of games that address policy and management issues.

There is no single definition of serious games, though they are generally held to be games used for training, advertising, simulation, or education that are designed to run on personal computers (such as a PC running Microsoft Windows or Linux) or video game consoles (such as the Xbox or PlayStation 2).

Development

The concept of using games for education dates back before the days of computers, but the first serious game is often considered to be Army Battlezone, an abortive project headed by Atari in 1980, designed to use the Battlezone tank game for military training. In recent years, the US government and military have periodically looked towards game developers to create low-cost simulations that are both accurate and engaging. Game developer's experience with gameplay and game design made them prime candidates for developing these types of simulations which cost millions of dollars less than traditional simulations, which often require special hardware or complete facilities to use.

Outside of the government, there is substantial interest in games for education, professional training, healthcare, advertising and public policy. For example, games from websites such as Newgaming.com are "very political games groups made outside the corporate game system" that are "raising issues through media but using the distinct properties of games to engage people from a fresh perspective," says Henry Jenkins, the director of MIT's comparative media studies program. Such games, he said, constitute a "radical fictional work."[1]

Advantages

Video and computer game developers are accustomed to developing games quickly and are adept at creating games that simulate—to varying degrees—real-world entities such as radar and combat vehicles. Using existing infrastructure, game developers can develop games that simulate battles, processes and events at a fraction of the cost of traditional government contractors.

Traditional simulators usually cost millions of dollars not only to develop, but also to deploy, and generally require the procurement of specialized hardware. The costs of media for serious games is very low. Instead of volumes of media or computers for high-end simulators, SGs require nothing more than a DVD or even a single CD-ROM, exactly like traditional computer and video games require. Deploying these to the field requires nothing more than dropping them in the mail or accessing a dedicated web site.

Finally, while SGs are meant to train or otherwise educate users, they often hope to be engaging. Game developers are experienced at making games fun and engaging as their livelihood depends on it. In the course of simulating events and processes, developers automatically inject entertainment and playability in their applications.

List of serious games

Since serious games are developed for private customers such as the US military and not the public at large, information on them is sometimes hard to come by. But some serious games either completed or in development are listed below.

America's Army (Microsoft Windows, Linux, Mac, Xbox, PS2): leading example of a serious game
Close Combat: First to Fight (Xbox and Microsoft Windows): Began as a USMC training game, converted into a commercial game
Crate (Windows): 3D Image Generation library for creating aquatic environments featuring pixel shaders and accurate physics models
Real War and Real War: Rogue States (Windows): RTS game originally designed as a military training strategy game before being rejected and becoming a commercial game.
DARWARS Ambush! Convoy Simulator developed as part of DARPA's DARWARS project, designed to create low-cost experiential training systems
Full Spectrum Warrior (Xbox): Began as a military training game, converted into a commercial game
Incident Commander (Microsoft Windows): Game to teach NIMS-compliant incident management for multiple scenarios, including terrorist attacks, school shootings, and natural disasters
Pulse!! (Microsoft Windows): Still in development, game to teach lifesaving techniques to EMT personnel
Interactive Trauma Trainer (Microsoft Windows): Currently under development, a decision based surgical training tool for the UK MOD.
Trex (Xbox): Tactical simulation which uses satellite data to generate synthetic urban environments

Serious game developers

BBN, defense contractor working on the DARWARS project
BreakAway Games, developers of Emperor: Rise of the Middle Kingdom, Cleopatra and Tropico expansions and other games
Cyberlore Studios, Inc.
Destineer Studios
Digitalmill, Inc.
Muzzy Lane Software, Inc.[1]
Forterra, formerly There.com
Serious Games Interactive, developers of Serious Games currently in development is Global Conflicts:Middle East [2]
TruSim[3], One of the UK's leading serious games developers. A division of Blitz Games.
Virtual Heroes, Inc., developers of custom scenarios for America's Army for the U.S. Army

PIXELearning [4], a developer of serious games software engines aimed at non-technical learning professionals.

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Shoot 'em Up

A **shoot-em-up** (**shmup** for short in some areas, and also known as **arcade shooter**, **twitch shooter**, **space shooter**, or sometimes simply just **shooter**, with shoot 'em ups being the most popular subgenre of shooter), is a video game where the player has limited control of their character or machine and the focus is almost entirely on annihilation of their enemies. While the genre can have 3D graphics, the gameplay is almost exclusively in a linear, 2D style. The genre started in the arcades arguably with Space Invaders, and has experienced numerous different games on many formats. The genre still has a following today, with games like Ikaruga. Shoot 'em ups use a player score ranking. As mentioned previously, the genre is a subcategory of the overall shooter genre.

Types of Arcade Shooters/Shmups

These are what most gamers refer to as "shooters". Most games of this style come from the arcade. Some are console specific (e.g. Axelay), but they retain the spirit of the arcade.

Fixed Shooter

A fixed shooter has players only able to control their two-dimensional position on the screen and sometimes the direction they are facing. Fixed shooters have various degrees of movement freedom, sometimes only allowing control on a one dimensional line. Enemies usually also form in a gallery, and the game setup is often in a vertical orientation.

Famous fixed Shumps - Space Invaders, Galaxian, Phoenix and Galaga.

Vertical Scrolling Shooter

The scrolling shooter usually has the player(s) moving automatically through a level at a mostly fixed speed.

Vertical shmups come into two more varieties: *tate* shmups are those that are played on a vertically oriented monitor, and *yoko* shmups are those played on a standard horizontal monitor set-up. Tate shmups usually start as arcade games, with custom cabinets. But the screen orientation becomes a serious issue when the game is ported to home consoles with regular TVs.

There are four ways to adapt a tate shmup to home consoles:

- turning the TV to the side - *maximum fidelity to the original game; turning a big CRT TV may damage it.*
- black borders on the sides - *hassle-free, but sacrifices screen size.*
- zooming into game area - *seriously modifies gameplay; detested by most shmup aficionados.*
- turning it into a horizontal shmup - *radically modifies gameplay; very rare, an optional mode in a few games such as* Ikaruga.

Famous vertical shmups - Raiden, Ikaruga, 1942, Radiant Silvergun, Star Soldier

Horizontal Scrolling Shooter

Most horizontal shmups are played on a horizontally oriented screen, but there are a few exceptions - such as Darius, which uses more than one monitor to create an extremely long playfield, and Stinger, which uses a vertically oriented screen.

Famous horizontal shmups - Gradius, R-Type, Darius, Thunderforce, Blazing Star

Multi-Scrolling Shooter

Multi-scrollers are a combination of horizontal and vertical oriented shmups.

Famous multi-scrolling shmups - Life Force, Axelay

Tube Shooter

Tube shooters comprises of games where players move forward through a "tube", essentially a 2D scrolling shooter plane rolled into a cylinder or extended to a three dimensional volume. Movement is usually restricted to the ring formed by the edge of the curved plane.

Famous tube shooters - Tempest, Gyruss

Multi-directional Shooter

Multi-directional shooters allow complete freedom of movement (and shooting) in a 2D environment. The playing field may or may not be restriced.

Famous multi-direction shooters - Robotron 2084, Time Pilot, Bosconian, Smash TV

3/4 View Shooter

Also known as an isometric shooter; a vertical shooter's playing field is tilted, so that upwards/forwards is diagonal. The player simulates moving diagonally through the scroll. These shmups aren't a popular choice to create, although there have been a handful of popular titles.

Famous 3/4 view shmups - Zaxxon, Viewpoint

Styles of Arcade Shooters/Shmups

Standard

This is the shooter most people think of when they think of a 'Shooter'. Periodical enemies, firing at the player or simply being hazards themselves. This style is the normal amongst many shooter series.

Famous Standard Style Shmups - Anything above.

Bullet Curtain

A bit more obscure than what most people know. While standard shooters generally have a comparably few amount of bullets and a huge hitbox for the player, Bullet Curtain style shooters are the exact opposite. Many bullets fill the screen, while the player has a very small margain at which they are hit. Shmups of this style are almost always 'Vertical shooter' types, however, other types are known to exist.

Famous Bullet Curtain Shmups: The 'Touhou' series, Moedan

Competitive

This style of shooter features two players playing simultaneously. But instead of working together, the two players are trying to outlast and thwart the other player. The field is usually split-screen with a Vertical shooter type.

Famous Competitive Shmups: 'Twinkle Star Sprites'

Non-Arcade Style Shooters/"Action-Shooters"/Other Shooters

Sometimes non-shmups are described as "shooters". Although several of these types of games were released in arcades, these aren't always associated among hardcore shooter lovers as arcade shooters, and because of their non-arcadeish nature are often dubbed "action-shooters". This includes run-and-gun shooters and rail shooters. There are also first-person shooters, and light gun shooters.

Screenshots of Arcade Shooters/Shmups

Fixed and Gallery Shooters

Space Invaders
Arcade - ©1978 Taito

Galaga
Arcade - ©1981 Namco

Horizontal Scrolling Shooters

Gradius
Arcade - ©1985 Konami

R-Type
Arcade - ©1987 Irem

Vertical Scrolling Shooters

Raiden
Arcade - ©1990 Seibu Kaihatsu

RayForce

Arcade - ©1994 Taito

Multi-scrolling Shooters

Axelay
SNES - ©1992 Konami

Salamander/Life Force
Arcade - ©1986 Konami

Tube Shooters

Tempest
Arcade - ©1980 Atari

Gyruss
Arcade - ©1983 Konami

Multi-Directional Shooters

Robotron: 2084
Arcade - ©1982 Williams Electronics

Time Pilot
Arcade - ©1982 Konami

3/4 View Shooters

Zaxxon
Arcade - ©1982 Sega

Viewpoint
Arcade/Neo-Geo - ©1992 Sammy

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Turn-based Games

A **turn-based game**, also known as **turn-based strategy**, is a game where the game flow is partitioned in well-defined and visible parts, called turns or rounds. For example, when the game flow unit is time, turns represent units of time, like years, months, weeks, or days. A player of a turn-based game is allowed a period of analysis before committing to a game action, ensuring a separation between the game flow and the thinking process, which in turn leads presumably to better solutions. Once every player has taken his turn, that round of play is over, and any special shared processing, is done. This is followed by the next round of play.

Types

TBS games come in two flavors, depending on whether inside a turn players play simultaneously or take their (mini-)turns. The former games fall into the simultaneously-executed TBS games, with *Diplomacy* a notable example. The latter games fall into player-alternated TBS games, and are subsequently subdivided into (A) ranked, (B) round-robin start, and (C) random, the difference being the order under which players start within a turn, (A) the first player being the same every time, (B) the first player selection policy is round-robin, and (C) the first player is randomly selected.

Most board games are turn-based, otherwise gameplay would most likely get out of hand. Many single-player strategic video games are also turn-based. However, when a particular player gains access to the game during his/her turn it is not uncommon to value the time taken by the player to make the move to improve the fairness of the game. In Chess, a pair of stop clocks may be used to track the time taken by players to make their moves.

Turn-based gaming refers to Internet gaming sites that allow for game play to extend beyond a single session, over long periods of time —often taking months for complex games like Go or Chess to finish.

Examples

Example board games

- Risk, Monopoly, Parcheesi, Scrabble, Sorry!, Uno, Poker, Chess, Go, Othello, Diplomacy, Draughts

Examples Play-by-mail games

Play-by-email TBS games allow the orders to be passed in a very loose synchronization mechanism: email. In a way, it's the modern successor of the old play-by-mail style used in Europe in the mid-17th century: two chess players would be able to play together from miles away, if they could transmit their moves through some fast transport service, which happened to be (horse-powered) mail (postallion). PbeM examples: Atlantis PbeM or Dominions II.

Example computer games

Mainstream companies

After a period of converting board and historic TBS games to computer games, the big companies have started to come up with new ideas for computer TBS games.

Probably the best known turn-based game is Sid Meier's Civilization, which evolved into a long series of successor games and derivatives. Other notable examples include:

Heroes of Might and Magic
Jagged Alliance
Magic: The Gathering
Roguelike games
X-COM

In addition, many other games that are not generally turn-based have the notion of turns during specific sequences. Notably the roleplaying game *Fallout* is turn-based in the combat phase, allowing players and foes to lay up tactics against each other.

Indie game developers

An interesting market trend is the rise of Indie TBS games (games produced by small groups, independent or slightly affiliated with the computer games industry), which normally extend or refine one or another already existing TBS strategy games.

Amongst others, three good examples are *Age of Castles, *Battles of Norghan and *Leaderz.

Open source games

Open source has also seen the rise to games such as The Battle for Wesnoth. Directories such as Freshmeat provide large lists of open source turn-based strategy projects.

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Console Games

A **console game** is a form of interactive multimedia used for entertainment. The game consists of manipulable images (and usually sounds) generated by a game console, and displayed on a television or similar audio-video system. The game itself is usually controlled and manipulated using a handheld device connected to the console called a controller. The controller generally contains a number of buttons and directional controls (such as analog joysticks) each of which has been assigned a purpose for interacting with and controlling the images on the screen. The display, speakers, console, and controls of a console can also be incorporated into one small object known as a handheld game console.

Game multimedia usually comes in the form of a cartridge or, more recently, higher-capacity disc, which can be inserted into the game console. Simpler consoles, however, may only have a fixed selection of built-in games.

Introduction

Video games generally each contain different gameplay, objectives, goals, control-schemes, characters, and other features. Each video game is usually contained on a specifically designed multimedia disc or cartridge, which are generally sold separately from the console and each other. In order to play the specific game, you need the specific console for which it was designed. For example, in order to play the video game Pikmin 2, you need to use a Nintendo GameCube. The most popular consoles in the market today(as of 2005) are the Sony PlayStation 2, Nintendo GameCube, and the Microsoft Xbox.

Console and display

Controllers

The different consoles each use different controllers. Controllers are input devices used to interact with the game. So, for example, if you had a game in which you must control a character in order to obtain a red apple, you would be able to use an analog stick or directional pad ("D Pad") to move your character towards the apple to collect it. Video games, of course, are usually much more complicated than this. In the game Pikmin for the Nintendo GameCube, the player uses the analog stick to control his character, the C analog stick to tell his Pikmin what to do or where to go, and the A button to throw the Pikmin.

Screen

Most video games require a screen of some sort. In the case of normal consoles, a television is the most common form of screen used. The screen is used as a source of visual output. As the player pushes buttons and moves analogs on the controller, the screen responds to the actions and changes take place on the screen, simulating actual movement.

Consoles use a large sized (albeit low-resolution) television as their visual output device: optimal for viewing at a greater distance by a larger audience. As a result, many video games are designed for local multiplayer play, with all players viewing the same TV set, with the screen divided into several sections and each player using a different controller.

Video games have generally had access to less computing power, less flexible computing power, and lower resolution displays. Dedicated consoles were advanced graphically, especially in animation. This is because video game consoles had dedicated graphics hardware, were able to load data instantly from ROM, and a low resolution output would look better on a television because it naturally blurs the pixels.

Limitations

Many people feel console games offer a more limited and simplistic gaming environment than their personal computer counterparts, primarily due to the limited nature of the console's controller. Personal computers, by contrast, usually offer a keyboard, and in the case of most modern computers, a mouse, allowing for a wider variety of player actions. Other factors resulting in perceived differences between console games and PC games include technological limitations within the hardware itself, such as low-resolution visual output. Game consoles are primarily played on televisions, where the image sharpness is quite low and the games are usually played from a distance. This means that the text, such as that for a scoreboard, must be considerably larger and take up more of the space. However, the new generation of consoles due out in 2005-2006 (PlayStation 3, Nintendo Revolution and Xbox 360) offer support for high-resolution HDTV output, which is equal or higher resolution than most Personal

Computer monitors.

Market demands also dictate the types of games that are available for a console. Consoles have historically been regarded as a "children's toy" with personal computers being "more adult". Thus, consoles have, in the past seen more simple games, such as platform games, shoot-em-ups and beat-em-ups, whereas computers have been dominated by the RPG, strategy and simulation genres. With the proliferation of consoles among adults as well as technological advances in recent years, however, this line has blurred somewhat. Strategy games, role-playing games and, to a lesser extent, simulations, are now regularly found on consoles.

This evolution has popularized certain genres, most notably the "console RPG", to which titles such as Final Fantasy belong - RPGs more complex than the average console game.

Ratings & Censorship

ESRB

The Entertainment Software Ratings Board or ESRB gives videogames maturity ratings based on their content. For example, a game might be rated T for Teen if the game contained obscene words or violence. If a game contains explicit violence or sexual themes, it is likely to receive a M for Mature rating, which means that no one under 17 should play it. There are no laws that prohibit children from purchasing "M" rated games in the United States except in California, but many stores will enforce rules prohibiting children from getting them anyway. In other countries, there are laws for this.

Video game manufacturers usually exercise tight control over the games that are made available on their systems, so unusual or special-interest games are more likely to appear as PC games. Free, casual, and browser-based games are usually played on available computers, mobile phones, or PDAs.

PEGI

PEGI (Pan European Game Information) is a system that was developed to standardize the game ratings in all of Europe (NOT just EU, although the majority are EU members), the current members are: all EU members, except Germany and the 10 accession states; Norway; Switzerland. Iceland is expected to join soon, as are the 10 EU accession states. For all PEGI members, they use it as their sole system, with the exception of the UK, where if a game contains certain material, it must be rated by BBFC. The PEGI ratings are, in most parts (but not all) legally binding, and it is a criminal offence to sell a game to someone if it is rated above their age.

Germany: BPjM and USK

Stricter game rating laws mean that Germany does not operate within the PEGI. Instead, they adopt their own system of certification which is required by law. The USK (Unterhaltungssoftware Selbstkontrolle or Voluntary Certification of Entertainment Software) checks every game before release and assigns an age rating to it - either none (white), 6 years of age (yellow), 12 years of age (green), 16 years of age (blue) or 18 years of age (red). It is forbidden for anyone, retailers, friends or parents alike, to allow a child access to a game for which he or she is underage. If a game is particularly violent, it may be referred to the BPjM (Bundesprüfstelle für jugendgefährdende Medien - Federal Verification Office for Child-Endangering Media) who may opt to place it on the *Index* upon which the game may not be sold openly or advertised in the open media. Unofficially, the titles are not "banned" - adult gamers are still technically free to obtain the titles by other means, although it is still considered a felony to supply these titles to a child.

Other information

Japanese gaming was overrun in the mid 1980s with the release of the Nintendo Family Computer (Famicom, or Nintendo Entertainment System elsewhere) and Super Mario Bros.. Since then, many of the popular games released in the NES era have since developed continuing sequels, including games like Mario, Zelda, and Final Fantasy.

Cartridges were previously common storage devices for console game data, but due to technological advances most video games are now stored on CDs, or higher capacity DVDs.

Critics of video games

From time to time, video games have been criticized by parents' groups, psychologists, politicians, and some religious organizations for allegedly glorifying violence, cruelty, and crime and exposing children to these elements. It is particularly disturbing to some adults that some video games allow children to act out crimes (for example, the Grand Theft Auto series), and reward them for doing so. Some studies have shown that children who watch violent television shows and play violent video games have a tendency to act more aggressively on the playground, and some people are concerned that this aggression may presage violent behavior when children grow to adulthood. These concerns have led to voluntary rating systems adopted by the industry, such as the ESRB rating system in the United States and the PEGI rating system in Europe(see above), that are aimed at educating parents about the types of games their children should or should not be playing (or are begging to play).

Most studies, however, reach the conclusion that violence in video games is not causally linked with aggressive tendencies. This was the conclusion of a 1999 study by the U.S. government, prompting Surgeon General David Satcher to say, "...we clearly associate media violence to aggressive behavior, but the impact was very small compared to other things. Some may not be happy with that, but that's where the science is." This was also the conclusion of a meta-analysis by psychologist Johnathan Freedman, who reviewed over 200 published studies and found that the majority did not find a causal link.

Critics of movies, television, and books as a group look down on video games as an inferior form of entertainment. This is probably because of the observation that most video games have very little plot and even less character development, which may or may not be true. A frequent counterargument is that this is like complaining that a game of football does not contain much plot or character development, and that although video games include a narrative, they are really about acting in and against a virtual world, which is not primarily based upon passively seeing and hearing. Another point of view compares video games to the movies, which during the silent era were also considered mere entertainment.

See also

- Video game console
- Computer and video games

Home | Up | Video Game Consoles

Video Game Consoles

A **video game console** is a dedicated electronic machine designed to play video games. Often the output device is a separate television or a computer monitor. The main input device is a controller.

There was a time when video game consoles were easily distinguishable from personal computers: consoles used a standard television for display, and did not support standard PC accessories such as keyboards or modems. However, as consoles have become more enhanced, the distinction has blurred: some consoles can have full Linux operating systems running with hard drives and keyboards (not like the Sony PlayStation 2).

The console market has steadily developed from simple one-off games, such as *PONG*, to fully featured general purpose games systems.

Older game consoles and their software now live on in emulators as they are no longer supported by their manufacturers. However, console makers try to prevent their games from being played on emulators using copyright-like exclusive rights in mask works and a protection of encrypted media created by the United States' Digital Millennium Copyright Act and foreign counterparts.

Note that the advertised "bitness" of post-32-bit consoles were in large part created by the console makers' marketing departments and may have little to do with the actual architecture or processing power of the systems.

Video game consoles have created a whole self-supporting market for thousands of different video game accessory manufacturers who would otherwise not be able to produce their own video game consoles. These manufacturers have expanded upon the original uses for the game consoles and have even created entirely new ways to both play and use some of the most popular video game systems.

Seventh Generation Consoles

- PlayStation 3, will be released in spring-mid 2006.
- Xbox360, released in November 2005.
- Revolution will be released in 2006.

Sixth Generation Consoles

- PlayStation 2 The sequal to the PlayStation.
- Xbox Microsoft's first videogame console.
- Gamecube Nintendo's sixth generation videogame console.

See also

- History of computer and video games
- List of video game consoles
- List of handheld game consoles
- Tabletop video game consoles

Books

Forster, Winnie (2005). The Encyclopedia of Game Machines - Consoles, handheld & home computers 1972-2005, GAMEplan. ISBN 3-00-015359-4.

Home | Up | List of Video Game Consoles

List of Video Game Consoles

This is a **list of video game consoles** by the era they appeared in. Eras are named based on the dominant console type of the era (even though not all consoles of those eras are of the same type). Also included in this list is handheld game consoles, which are usually of lower power than the home consoles of the same era.

Seventh generation era (2004-present)

- Nintendo DS (2004)
- PlayStation Portable (2004)
- Gizmondo (2005)
- Xbox 360 (2005)
- PlayStation 3 (2006)
- Nintendo Revolution (2006)
- Infinium Labs Phantom

Sixth generation era (1998-2006)

- Tapwave Zodiac (2003)
- N-Gage (2003)
    - N-Gage QD (2004)
- Microsoft Xbox (2001)

- Nintendo GameCube (2001)
- Game Boy Advance (2001)
  - Game Boy Advance SP (2003)
  - Game Boy Micro (Fall 2005)
- PlayStation 2 (2000)
- Sega Dreamcast (1998)

32/64-bit era (1993-1999)

- WonderSwan (1999) (handheld)
  - WonderSwan Color (2000) (Japan Only) (handheld)
  - Swan Crystal (handheld)
- Neo Geo Pocket (1998) (Japan Only)
  - Neo Geo Pocket Color (1998 Japan/1999 US)
- Game Boy Color (1998) (handheld)
- Nintendo 64 (1996) (64-bit)
  - Nintendo 64DD (Japan Only)
- PlayStation (1995)
- Sega Saturn (1994)
- Virtual Boy (1995)
- Apple Pippin (1995)
- PC-FX (1994)
- Playdia (1994)
- Atari Jaguar (1993) (64-bit)
  - Atari Jaguar CD (1995)
- 3DO (1993)
- Commodore Amiga CD32 (1993)

16-bit era (1989-1995)

- Philips CD-i (1991)
- Supervision (1992)
- Super Nintendo Entertainment System (1991) / Super Famicom (1990, Japan)
- Sega Game Gear (1991) (handheld)
- Neo-Geo (1990)
  - Neo-Geo CD
  - Neo-Geo CDZ
- Sega Genesis (1989) / Sega Mega Drive (1988, Japan)
  - Sega CD (1992)
  - Sega 32X (Sega Genesis 32X or Sega Mega Drive 32X or Sega Super 32X) (1994)

    - Sega Nomad (1995)
- TurboGrafx 16 (1989)
    - TurboGrafx-CD
    - TurboDuo
    - TurboExpress (handheld)
    - SuperGrafx
- Atari Lynx (1989) (handheld)
- Game Boy (1989) (handheld)
    - Game Boy Pocket (1996) (handheld)
    - Game Boy Light (Japan Only) (handheld)

8-bit era/Post-crash of '83 era (1985-1990)

- Commodore 64GS (1990)
- Amstrad GX4000 (1990)
- PC Engine (1987, Japan)
- Atari XEGS (1987)
- Atari 7800 (1986)
- Sega Master System (1986) / SG-1000 Mark III (1985, Japan)
- Nintendo Entertainment System (1985) / Famicom (1983, Japan)
    - Nintendo Entertainment System hardware clone (released everywhere on various dates)

Early cartridge-based 8-bit systems (1979-1984)

- Vectrex (1982)
- Emerson Arcadia 2001 (1982)
- Atari 5200 (1982)
- Colecovision (1982)
- Game And Watch (1980) (handheld)
- Intellivision (1980)
- APF Imagination Machine (1979)
- Microvision (1979) (handheld)
- Magnavox Odyssey² (1978)
- Bally Astrocade (1977)
- Atari 2600 (1977)
- RCA Studio II (1976)
- Fairchild Channel F (1976)

The first home video games/pre-crash of '77 (1972-1977)

- Coleco Telstar (1976)
- APF TV Fun (1976)
- PONG (1972)
- Magnavox Odyssey (1972)

* Consoles of the early 1970s (Pong and Magnavox Odyssey) were often inaccurately called "analog" but actually used discrete logic.

See also

- History of video games

Home | Up | Game Boy | Gizmondo | Nintendo | PlayStation | Sega Dreamcast | The Phantom | Xbox

Game Boy

The **Game Boy** line (also: **Gameboy**, **Game-boy**; Japanese: ²üàÜü ¤ Geemu Booi) is a line of battery-powered handheld game consoles sold by Nintendo. It is one of the best-selling game system lines selling over 100 million units world wide to date, and has spawned many successful spin-offs. The original Game Boy's design set the standard for handheld gaming consoles.

History

Nintendo's Game Boy handheld was first released in 1989. The gaming device was the brainchild of long-time Nintendo employee Gunpei Yokoi, who was the person behind the Ultrahand, an expanding arm toy created and produced by Nintendo in 1970, long before Nintendo would enter the video game market. Yokoi was also responsible for the Game & Watch series of handhelds when Nintendo made the move from toys to video games. Some consider these early LCD-display handhelds to be a prototype of the Game Boy. When Gumpei designed the original Game Boy, he knew that, to be successful, the system needed to be small, light, inexpensive, and durable, as well as have a varied, recognizable library of games upon its release. By following this simple mantra, the Game Boy line managed to gain a vast following despite technically superior alternatives.

Game Boy continues its success to this day and many at Nintendo have dedicated the handheld in Yokoi's memory. Game Boy celebrated its 15th anniversary in 2004, which coincided closely with the 20-year anniversary to the original Nintendo Entertainment System (NES). To celebrate, Nintendo released the Classic NES Series and a NES-themed color scheme for the Game Boy Advance SP.

Versions

The Game Boy console went through several design iterations, without significant changes to its computing power, since its release in 1989.

Game Boy

The original Game Boy was released on April 21, 1989 in Japan and in August 1989 in the United States. Based around a Z80 processor, it had a black and green reflective LCD screen, an eight-way directional pad, and two action buttons. It played games from ROM-based media contained in small plastic detachable units called cartridges (sometimes abbreviated as carts).

The game that really pushed it into the upper reaches of success was *Tetris*. Originally only available in neutral grey color, Nintendo released several colored Game Boy models in 1995, advertising them in the *Play it Loud!* campaign. The original Game Boy was the first cartridge-based system that supported more than four players at one time (via the link port). In fact, it has been shown that the system could support 16 simultaneous players at once (this was only supported in one game, however).

The trademark **Game Boy** became ambiguous to fans of the Game Boy series.

CPU
: Custom 8-bit Sharp Z80 at 4.194304 MHz (has a slightly different instruction set than a standard Z80, and integrated sound generation)

RAM
: 8 kByte internal S-RAM

Video RAM
: 8 kByte internal

ROM	256 kbit, 512 kbit, 1 Mbit, 2 Mbit and 4 Mbit and 8 Mbit cartridges
Sound	4 channel stereo sound. The unit only has one speaker, but headphones provide stereo sound
Display	Reflective LCD 160 x 144 pixels
Screen Size	66 mm (2.6 in) diagonal
Color Palette	4 shades of "gray" (green to black)
Communication	Up to 4 Game Boys can be linked together via serial ports
Power	6 V, 0.7 W (4 AA batteries provide ~35 hours)
Dimensions	90mm(W) x 148mm(H) x 32mm(D)/3.5 x 5.8 x 1.3 (inch)

Game Boy Pocket

In 1996, Nintendo released the Game Boy Pocket, a smaller, lighter unit that required fewer batteries. It had space for 2 AAA batteries, which would provide roughly 10 hours of game play. The Game Boy Pocket has a smaller link port, requiring an adapter for linkage with the older Game Boy. The port's design was used on all subsequent Game Boy models, up until the Game Boy Micro. The screen was changed to a true black-and-white display, rather than the "pea soup" monochromatic display of the original Game Boy. The first version didn't have a LED to show battery levels, but was soon added due to public demand.

Game Boy Light

Only available in Japan, the Game Boy Light was about the same size as the Pocket and had a backlit screen for improved visibility. It uses 2 AA batteries which give it approximately 20 hours with the light off and 12 with it on.

The Game Boy Light is the rarest Game Boy variant outside of Japan. Due to its rarity, it often sells for many times more than the other models.

Game Boy Color

Released in November 1998, the Game Boy Color (also referred to as GBC) added a color screen to a form factor slightly larger than the Game Boy Pocket. It also has double the processor speed, twice as much memory, and an infrared communications port. A major draw of the Game Boy Color was its backward compatibility (that is, a Game Boy Color is able to read older Game Boy cartridges and even play them in selectable color). This became a major feature of the Game Boy line, since it allowed each new launch to begin with a significantly larger library than any of its competitors. Technologically, it was likened to the NES from the 1980s.

Game Boy Advance

Main articles: Game Boy Advance

In June 2001, Nintendo released a significant upgrade to the Game Boy line. The Game Boy Advance (also referred to as GBA) featured a 32 bit 16.8 MHz ARM. It included a Z80 processor for backwards compatibility support. It was technically likened to the SNES and showed its power with successful ports of Super Mario World and Yoshi's Island. It has also been accompanied alongside new titles such as Mario Kart Super Circuit and F-Zero: Maximum Velocity.

Game Boy Advance SP

Main articles: Game Boy Advance SP

Launched in March 2003, the Game Boy Advance SP resolved several problems with the original model. It features a new smaller clamshell design with a flip-up screen (protecting the screen, an issue with the original), an internal frontlight (the original had no such light), and rechargeable battery, but was otherwise unchanged. The *SP* stands for ***Special*** [1]. In mid September 2005, Nintendo released a new model that featured a new and improved backlit screen. As of this writing, the SP is the last Game Boy handheld to offer backwards compatibility with Game Boy/Game Boy Color games.

Game Boy micro

Main articles: Game Boy micro

A second Game Boy Advance redesign (third design), the Game Boy micro is four inches wide, two inches tall and less than an inch deep and weighs 2.8 ounces, by far the smallest Game Boy created. It has the brightest screen ever made by Nintendo and is slightly smaller than the SP or GBA screens while maintaining the same resolution (240 x 160 pixels). The Game Boy micro is not backwards compatible with Game Boy or Game Boy Color games. It was released on September 19, 2005 in Japan and North America. It was released in Europe on November 4, 2005. The Micro's North American launch price of $102.50 was lowered to $89.99 during the 2005 holiday season.

Nintendo DS

Main articles: Nintendo DS

The Nintendo DS launched on November 20, 2004 in North America and December 4, 2004 in Japan, making it unusual as a Nintendo device to launch in North America before Japan. In fact, its unusual design and touch-screen control completely separated it from the Game Boy line. Instead, Nintendo refers to it as their *third pillar*; their home consoles (such as the Nintendo GameCube) being the first pillar, and their Game Boy line of portables being the second pillar. However, the Nintendo DS can be considered a part of the portable family due to structural similarities to Game Boy and its ability to play Game Boy Advance cartridges (but not Game Boy Color or original Game Boy cartridges). It was technically likened to the Nintendo 64.

Accessories

Game Boy Camera & Printer

The Game Boy Camera & Printer are accessories for the Game Boy handheld gaming console and were released in 1998. The camera could take basic black & white, often grainy, digital images using the 4-color palette of the Game Boy system. The printer utilized heat-sensitive paper to "burn" any saved images, making a hard copy. Both items were marketed by Nintendo as light-hearted entertainment devices, in all three major videogame regions of the world: Japan, North America, and Europe. The N64 magazine (published by Future) dedicated a monthly section to the device.

It was never Nintendo's intention to transform the GB system into a PDA; any such claims are untrue. However, a commercial advertising the products showed a young kid using the devices, with an adult using a laptop looking over in astonishment. The commercial at least indicates that Nintendo was at least referencing and/or parodying adult-geared portable systems.

There are also several mini-games along with the camera. A picture of the user's head is inserted into several mini-games.

1. **Ball** is a juggling game, in which the player moves his or hand around to catch and throw balls. The head is the person juggling.
2. **DJ**, probably the most popular game on the Game Boy Camera, the player can mix and create his or her own music. The player's head is the DJ.
3. **Space Fighter II** is an exact port of its arcade version. In the game, the player controls a spaceship which fires missiles at other ships. The player's head becomes the boss of each level.
4. **Run! Run! Run!** is the bonus game, which is obtained by reaching a score of 2,000 or more in Space Fighter II. The player's head becomes attached to a cartoon body, and he or she races against a mole and a bird for the finish line.

Recently, the EyeToy accessory for the PlayStation 2 has vastly expanded upon the idea of using the image of the player in the game and as part of the game.

Super Game Boy

The **Super Game Boy** is a plug-in cartridge for the Super Nintendo Entertainment System that allowed Game Boy games to be played on a television screen. The black-and-white games could be colorized by mapping colors to each of the four grays. A follow-up, the Super Game Boy 2 (primarily released in Japan, though some sold through QVC's shopping channel in the U.S.), included more colors, frames, and a link port for multiplayer support.

Transfer Pak

The **Transfer Pak** was a device that fit onto the Nintendo 64 controller. However, unlike the Super Game Boy, it was only for the transfer of Game Boy Color data to their N64 equivalents. The only exception was Pokémon Stadium, which allowed players to play Pokémon Red, Blue, and Yellow on the television screen. Pokémon Stadium 2 was compatible with all the Game Boy and Game Boy Color Pokémon games.

Game Boy ExChanger (GBX)

The (unofficial) GBX, produced by Bung Enterprises Ltd, was the best-known backup unit for Game Boy and Game Boy Color games. The device plugged into the parallel port of the PC and allowed dumping ROM and SRAM sumee data to PC, as well as rewriting flashcarts to play copies of Game Boy games.

Game Boy Player

The successor to the Super Game Boy, the Game Boy Player allows Game Boy, Game Boy Color, and Game Boy Advance games to be played on the Nintendo GameCube. It also has a link port so players can use multiplayer and e-Reader functions. It uses the same color palette built into the cart instead of colorizing the games.

Game Boy Advance Wireless Adapter

The Wireless Adapter allows players to play wirelessly without a link cable. As of 2005, fewer than twenty games support this feature. The feature's greatest usefulness is most evident in Pokémon FireRed, LeafGreen, and Emerald – up to sixteen Wireless Adapter-connected players could convene in a "Union Room" of sorts.

e-Reader

A peripheral released for the Game Boy Advance and SP that unlocks special content for certain games. Content includes mini-games, different worlds, or full and complete games. The content was added or unlocked by purchasing e-Reader cards and swiping them in. The e-Reader was considered to be a general failure; although still selling in Japan, it was not released in Europe, and was quickly discontinued in North America.

Cartridges

Each video game is contained in a small plastic cartridge (or "cart"). Game Boy and GBC cartridges measure 5.8 cm by 6.5 cm. The software contained within provides the data, logic, and rules of the game, accepts input from the console controls or buttons, and outputs the results to the screen display and speaker. If the developer wishes, they can include either a small battery or a flash chip within the cartridge, which allows game data to be saved; this allows the game to be continued at a later time.

The game cart is inserted into the console cart slot. If the game cart is pulled out while the power is on, the Game Boy will exhibit undefined behavior. This will freeze the game and may cause weird occurrences, such as rows of zeros appearing on the screen and the sound remaining at the same pitch as was emitted the instant the game was pulled out. Pulling a cart out of the Game Boy while the power is on may cause saved data or hardware to be damaged. This applies to all video game consoles, especially those using cartridges.

The original Game Boy power switch was designed to prevent the player from being able to remove the cart while powered on. Cartridges intended only for Game Boy Color (and not for the original Game Boy) use the space intended for the locking mechanism to prevent insertion into the original Game Boy. Even if this is bypassed, the game will not run, and an image on the screen will inform you that the game is only meant for Game Boy Color systems; however, the Game Boy Pocket allows for bypassing of the notch.

There are four types of cartridges used on Game Boy systems:

1. **Gray cartridges** can be used with all Game Boy systems except the Game Boy Micro and the DS. All original Game Boy and Game Boy Pocket titles are of this type. Sometimes these cartridges came in other colors, such as red and blue for Pokémon or yellow for Donkey Kong Land, and Pokemon: Special Pikachu Edition. These games were programmed in black & white; when used on the Game Boy Color or Game Boy Advance, the color of the graphics can be chosen at the start-up screen. Many games produced from 1994 through 1998 also had Super Game Boy enhancements.
2. **Black cartridges** are compatible with the Game Boy, Game Boy Pocket, and Game Boy Light systems, and are in full color on Game Boy Color, Game Boy Advance, and SP (e.g. Pokemon Gold, Pokemon Silver and Dragon Warrior I&II). Games such as Wario Land II DX, The Legend of Zelda: Link's Awakening DX, and Tetris DX were re-releases of gray cartridge games with additional content and in full color. Roughly one quarter of Game Boy Color releases was black cart games. A small number of these games also had Super Game Boy enhancements.
3. **Clear cartridges** can only be played on Game Boy Color and beyond. They do not physically fit in the original Game Boy, Game Boy Pocket, Game Boy Micro, or DS due to their design. Roughly three quarters of Game Boy Color releases were clear cart games.
4. **Advance cartridges** are half the size of all earlier cartridges and can only be played on Game Boy Advance and beyond and

on the Nintendo DS. However, the DS cannot use the multiplayer modes of Game Boy Advance titles.

Popularity

Most game consoles become obsolete as newer systems become available. The Game Boy is unique in its stamina. 2004 brought about its 15th anniversary and in that time it has seen off many (often technically superior) rivals; most notably the Sega Game Gear and the Atari Lynx.

Thousands of games are available for the Game Boy, which can be attributed in part to its sales in the amounts of millions, a well-documented design, and a typically short development cycle.

The Nintendo DS is able to play the large library of Game Boy Advance games. However, it cannot play multiplayer GBA games or link to the Nintendo GameCube, and it is not backward-compatible at all with the original Game Boy or the Game Boy Color due to the lack of a Z80 processor.

Popular culture

- The short-lived 1980s cartoon series Captain N: The Game Master featured a life-sized Game Boy character, who communicated via faces on its screen.
- Television commercials in the late 1980s and early 1990s for the Sega Game Gear often mocked the Game Boy, at one point alledging it had a "creamed spinach color" in contrast to its own full-color graphics. However, many saw these commercials as petulant admissions that the Game Boy was thrashing the Game Gear in sales (as indeed it was).
- Thomas Ian Nicholas' character plays "Tetris" for Game Boy in the 1993 film *Rookie of the Year*.
- Numerous musical acts have appropriated the Game Boy as a musical instrument. Notably: 6955, Bit Shifter, Bubblyfish, Covox, Cow'P, dot.matrix, FirestARTer, Gameboy Music Club, Gameboyzz Orchestra, Glomag, Lo-bat, Bud Melvin, Nullsleep, OMAC, Saitone, etc.

Emulation

Some firmware has been released for the GBA Movie Player to allow ROM images for old Gameboy games to be used on the GBA, as well as the Nintendo DS. The ROM images are stored on CompactFlash cards used in the GBA Movie Player.

See also

- Nintendo DS
- Comparison of handheld gaming consoles
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Home | Up | Game Boy Advance | Game Boy Advance SP | Game Boy micro

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Game Boy Advance

Manufacturer

Nintendo

Type

Handheld game console

Generation

Sixth generation era

First available

March 21, 2001 (Japan)

Media

Cartridge

Controller input

{{{controllers}}}

Online service

Units sold

70.0 million (all versions, 2005)

Top-selling game

Pokémon Ruby, Sapphire and Emerald

The **Game Boy Advance** (**GBA**) is a handheld videogame console developed, manufactured and marketed by Nintendo. It is one of the latest in the Game Boy series of consoles, and the successor to the popular Game Boy Color. It was released in Japan on March 21, 2001, in North America on June 11, 2001, in Europe on 22nd June 2001, and in China on June 8, 2004. Its codename during development was **Project Atlantis**.

Hardware

The Game Boy Advance is backwards compatible with most games previously released for the Game Boy or the Game Boy Color, as well as new software developed to take advantage of the new technical capabilities of the system. It is powered by two AA batteries, which give about 15-30 hours of play time, as well as an optional power supply that plugs directly into the GBA's battery bracket.

Processors

The GBA has a custom 32-bit 16.8-MHz ARM processor (ARM7TDMI) based on a RISC architecture, which is much more suited to the C programming language than the 8-bit Z80-like processor used in older Game Boy models. The ARM processor can run both 32-bit ARM and 16-bit "Thumb" instruction set encodings. The system also contains an 8.4-MHz Z80-like processor to provide support for legacy GB software; however, both processors cannot be active at the same time.

Display

The 2.9" LCD is capable of a maximum of 240 × 160 pixels in 15-

bit color (32,768 colors). This display includes more pixels than Game Boy's 160 × 144; when playing legacy games, the user can press the "L" or "R" button to switch the display between 160 × 144 with a black border and scaling to 240 × 144 pixels. Early games had very dark color palettes because the display in the development kits was much brighter than the one in the production units; the production display has a gamma value of 4. Newer titles use gamma correction in their palettes.

If the color LCD has a fault, it is that the Game Boy Advance is lit by ambient light. Users quickly learned to tilt the device to take advantage of window or overhead illumination. An aftermarket internal lighting kit known as the Afterburner was briefly popular before the introduction of the Game Boy Advance SP, and influenced the development of the new model.

Graphics

The GBA has hardware support for simple 2D operations using graphical elements called sprites. It can scale, rotate, sum-blend, and alpha-blend sprites against a background (with one alpha value for the whole screen, not the alpha-blending of image edges seen in the PNG format), and it can change the scaling and rotation of sprites and the background on each scanline to give a pseudo-3D effect.

The GBA's picture generator has six display modes (three tiled and three bitmap) and 96 KiB of dedicated RAM. In tiled display modes, the system can manage four pixel-to-pixel layers, two pixel-to-pixel layers and one affine layer, or two affine layers, and it uses 64 KiB of RAM for tile and map data and 32 KiB for sprite cel data. In bitmap modes, it can display one large 16-bit bitmap, two 8-bit bitmaps (with page flipping), or one small 16-bit bitmap (with page flipping), and it uses 80 KiB of RAM for tile and map data and 16 KiB for sprite cel data. In all modes, it can show up to 128 sprites (individually controllable small moving objects) of 8 × 8 up to 64 × 64 pixels in either 4-bit or 8-bit indexed color. Each sprite can be drawn using either direct pixel mapping or affine mapping; it's possible to fit more direct sprites on a scanline.

Later games pushed the GBA to its limits with simple 3D graphics. These games include Wolfenstein 3D, Duke Nukem Advance, and Doom and Doom 2. Utilizing 2D sprites for objects and 3D graphics for architecture, these games usually achieve a passable framerate, although sometimes in large environments or with many objects onscreen the framerate will drop to a very noticeable level. Some feel that such 3D games are a logical and welcome step for the GBA, while others feel that they are overly ambitious and beyond the capabilities of the system. With the release of the DS, future 3D games for the GBA will most likely be limited.

Media

The interface from the GBA unit to the ROM cartridge includes only a 24-bit address bus multiplexed with a 16-bit data bus. (Mattel's Intellivision console had previously used a multiplexed bus.) This setup limits the directly addressable memory to 16 binary megawords (that is, 256 binary megabits or 32 binary megabytes), but bankswitching hardware on the cartridge can extend this by controlling the ROM's upper address lines from software, effectively switching other parts of the ROM into the GBA's address space. Still, as of 2005, no published GBA titles have even executed such bankswitching hardware because 32 MiB of ROM is still too expensive for the price point at which most GBA games are sold. (It would possibly have to retail for $39.99 to $49.99)

By early 2002, hardware became readily available for moving user code onto the GBA. For example, in December 2001, a flash memory cartridge plus writing hardware could be had for less than $200 U.S., and a $50 device emulates a netbooting master. By April 2003, the prices had come down to under $100 for the flash cartridge and writer and $30 for the boot cable. Because of this, a homebrew software development community has sprung up (see gbadev.org). Nintendo, however, has a history of viewing such devices as nothing more than piracy tools, since they can be used to copy cartridges containing copyrighted software. In February of 2002, Nintendo began sending threatening letters to some United States resellers of such devices. Previous lawsuits had banned the importation of similar devices for the 8-bit Game Boy.

Connectivity

The GBA also has a serial port for connecting to other GBA units in a setup similar to a token ring network over a bus physical topology. A GBA can also receive up to 256 KiB of bootstrap code through the port, even when no cartridge is present (sometimes known as multiboot or netboot). This is used for multiplayer GBA connections, where multiple GBAs can play with only one cartridge; one GBA with a cartridge sends boot code to the other cartridge-less GBAs. The serial port can (with a suitable cable) also connect to a standard RS-232 serial port for debugging purposes and (hypothetically) Internet play, although a TCP/IP stack has yet to be implemented in a GBA game.

To link GBA games, a GBA link cable is required. To link regular GB or GB Color games, the older GB link cable is required, even if you're using two GBAs.

A wireless adapter was released on September 7, 2004 in the U.S. It allows GBAs to be linked without cords, and with more than four players at a time. It came bundled with Pokémon FireRed. However, a game has to be designed with the wireless adapter in mind, and there are only a few such games.

Models

Game Boy Advance (original model)

The Game Boy Advance sold at a base price of $100 USD when it was released in North America. Prior to the release of the Game Boy Advance SP, the GBA was the fastest selling game console in history. Despite its success, many criticized the original Game Boy Advance for still not adopting a lighted screen, which Nintendo would rectify with later models. As of 2005, the original model GBA has been discontinued in favor of the Game Boy Micro.

Game Boy Advance SP

Main articles: Game Boy Advance SP

In early 2003, Nintendo upgraded the Game Boy Advance giving it an internal light that can be turned on or off, a rechargeable lithium ion battery, as well as a folding case approximately half the size of the GBA. It was designed to address some common complaints with the original GBA.

Since the release of the Game Boy Micro, an improved version of the SP that utilizes a backlight has been made available. The switch that controls the light now toggles between "normal" (which itself is already brighter than a Nintendo DS's screen), and "bright", an intense brightness level similar to LCD television sets. The light cannot be turned off completely while the system is on.

Game Boy Micro

Main articles: Game Boy Micro

In September 2005, Nintendo released a third redesign of the

Game Boy Advance. This model again goes back to the Game Boy Advance horizontal orientation, is much smaller and sleeker, and was the first Game Boy model to feature a backlight. The Game Boy Micro also offers the user to switch between several colored faceplates to allow customization, a feature which Nintendo advertised heavily around the Micro's launch. This model is also distinguished from the other models of the Game Boy Advance, in another way; it does not support Game Boy or Game Boy Color titles.

Accessories

Nintendo has released many add-ons for the Game Boy Advance (GBA). These include:

Wireless Adapter - Released in 2004, this adapter hooks up to the back of the Game Boy Advance. It replaces link cables and allows many people to link up to each other. It markets for $20 and came included with Pokémon FireRed and LeafGreen. Because it was released so late in its life, only 10-12 games support this hardware. The adapter's usefulness is most evident in Pokémon; FireRed/LeafGreen feature a "Union Room" where up to sixteen people can enter to battle or trade Pokémon. The adapter itself was not backwards compatible, leading to criticism that this accessory was more novel than useful, only available on a few games.

Play-Yan - The Play-Yan is an MP3/MPEG4 player for the GBA and Nintendo DS. The cartridge is slightly bigger than normal GBA cartridge and includes a built-in headphone port as well as an SD Card slot. Music or videos that users have downloaded from the Internet can be transferred onto an SD Card and slotted into the Play-Yan device. Nintendo has released several mini games for the Play-Yan that can be downloaded from their website, although Nintendo later removed all mini game functionality through a firmware update. The Play-Yan is currently available in Japan only, but a European release has been confirmed for early 2006. Since Play-Yan did not have a US release to coincide with Game Boy Micro as rumored, an American release has been speculated for 2006 as well.

e-Reader - The e-Reader is a rather bulky scanning device that plugs into the game cartridge slot of the Game Boy Advance. Specialized cards with codes along the side and bottom are slid through the slit, scanning the card into the Game Boy Advance. Many ideas for the e-Reader have included cards that scan classic games like Donkey Kong and Excitebike onto the handheld ready to play, as well as a collaboration with Super Mario Advance 4 to have cards that unlock content. GameCube games like Animal Crossing had cards with unlockable content as well, and the Pokémon Trading Card Game playing cards also adopted the e-Reader codes. The e-Reader works with the Game Boy Player as well as the Game Boy Advance SP, but cannot fit into the Nintendo DS's Game Boy slot. It has been discontinued in America, but is still quite popular in Japan.

Game Boy Advance Video - These highly popular cartridges contain two episodes of 30 minute cartoon programs. First released in America in May of 2004, they cost $19.99 and included cartoons such as Pokémon, SpongeBob SquarePants, Sonic X and Teenage Mutant Ninja Turtles. Majesco has recently announced that Shrek, Shrek 2, and Shark Tale are all due out for GBA Video later this year and all three movies are in full. Unfortunately, these cartridges display an error when inserted into a GameCube via a Game Boy Player.

Unofficial accessories

GBA Movie Player - The GBAMP is a versatile gaming cartridge that allows people to play NES/Famicom games, watch movies (e.g. MPGs), see .TXT files, hear sound clips, etc.

TV Tuner - Not much is known as of yet, but it does what it implies. It will most likely be what is being sold now on the Game Boy Advance, and that is to make the portable system into a portable television.

Unofficial Game Boy Advance flash cartridges are also available. While they enable the distribution of homebrew applications and content, they may also facilitate the illegal distribution of copyrighted games.

Sales And Marketing

The Game Boy Advance along with the Game Boy Advance SP, and the Game Boy Micro did sell well. As of September 2005, the Game Boy Advance series sold 70.04 million units worldwide([1])

Games

The Game Boy Advance has become the modern flagship of sprite based games. With hardware superior to the Super Nintendo it has proven that sprite based technology could improve and live side by side with the 3D games of today's consoles. The Game Boy Advance not only has your typical platformers, but also a huge collection of SNES style RPGs. It has also become a popular system for old school gamers due to the increasing amount of games ported from various 8-bit and 16-bit systems of the previous era. Through the use of flash cartridges and emulators the Game Boy Advance can even play NES and PC Engine games, as well as AGI based Sierra On-Line PC adventure games.

Standout original titles include:

Advance Wars
Boktai
Golden Sun
Final Fantasy Tactics Advance
Fire Emblem
The Legend of Zelda: The Minish Cap
Mario & Luigi: Superstar Saga
Metroid Fusion
Metroid: Zero Mission
Mother 3
Pokémon Ruby / Sapphire
WarioWare, Inc.: Mega Microgame$

See also

- Nintendo DS

Home | Up

Game Boy Advance SP

Manufacturer

Nintendo

Type

Handheld game console

Generation

Sixth generation era

First available

February 14, 2003 (JP)

March 23, 2003 (US)

Media

Cartridge

The **Game Boy Advance SP**, released in March 2003, is an upgraded version of Nintendo's Game Boy Advance. The "SP" stands for "**Sp**ecial" – not "**S**pecial **P**roject" as some assume.

The SP was marketed at $99.99 USD at launch. In September 2004, Nintendo lowered the price to $79.99 USD. The SP is accompanied by the Nintendo DS (released in November 2004) and the Game Boy Micro (released in September 2005).

Changes

Improvements

Improvements over the original Game Boy Advance include:

- An internal frontlight
- A rechargeable lithium ion battery (instead of two regular AA batteries)
- Clamshell/Laptop design

The GBA SP is approximately half the width of the GBA when closed and roughly the height of Nintendo's Game Boy Color when open. The clamshell/laptop design protects the screen from scratches and dust. However, the casing is made from a different material, making it more prone to scratches than previous GB systems.

The GBA SP AC adapter comes with the package, whereas its predecessor, Game Boy Advance, required a separate adapter. The software library and general hardware specifications are identical to those of the Game Boy Advance.

Headphone jack

Due to form-factor limitations, Nintendo removed the headphone jack—which had been included on all previous Game Boy models. Headphones designed specifically for the GBA SP can be purchased, or standard headphones can be attached with an optional adapter that plugs into the same port as the AC adapter. This decision was widely criticized, for some gamers disliked having to pay $4.25 USD to buy an adapter. Some gamers believe that Nintendo should have included the headphone jack adapter in the SP package.

The headphone jack adapter can be found at Nintendo's North American Online Store, and is available for purchase in brick and mortar stores in Japan and Europe. Additionally, Majesco developed officially-licensed neckband stereo headphones that plugs directly into the port without the need of an adapter.

Battery life

The battery is similar to that of most mobile phones and lasts approximately 18 hours with the light off and 10 hours with it on.

Nintendo claimed that technological advances made it possible for the SP to include an internal light and a rechargeable battery. It launched at the same price of the original GBA ($99.99 USD). An additional motivation may have been a need to respond to Triton Labs' Afterburner aftermarket internal light kit, which proved that the original GBA could support an internal light with an acceptable drop in battery life.

The new backlit model's battery life is approximately 13 hours on the "low" setting and much less with the "high" setting. The backlit SP's light cannot be turned off.

Backlit model

In North America during September 2005, around the time of the Game Boy Micro's release, Nintendo released an improved version of the Game Boy Advance SP featuring a backlight instead of the previous version's frontlight. The brightness can be set to low or high; at low it is brighter and more colorful than the DS. The box says, "Now with a BRIGHTER backlit screen!" to distinguish the new model from the older, frontlit models. For now, it only comes in two colors, Pearl Blue and Graphite, but that is expected to change later on down the line. The new backlit Game Boy Advance SP with the SpongeBob SquarePants design and color scheme can be found exclusively through Toys "R" Us stores and Amazon.com.

As of this writing, there has been no formal announcement from Nintendo about this new model. Many have speculated that such an announcement would dampen the sales of the Game Boy Micro, as the Micro's screen clarity is a major advantage over the original GBA SP model. Nintendo spokespersons have stated that the upgraded system is due for a European release, but have not revealed a date.

On various message boards the new Backlit SP is often called GBASP 2 or SP2.

Criticism

The frontlight, although an improvement over the previous lack of light, has been criticized for giving a "washed-out" look to many games. Refraction effects cause a faint "ghost" image to appear above the screen itself, particularly noticeable with white-on-black images (for example, text). Gamers who have played GBA games on the Nintendo DS have commented that the difference between the SP's frontlight and the DS's backlight is like that of night and day. Such criticisms have been addressed with the new backlit model.

The refresh rate of the backlit SP is lower (50hz compared to 60hz), and the slight motion blur that results has also been criticized.

Due to the cartridge slot being on the bottom rather than the top, the tilt-sensor-based game Kirby Tilt 'n' Tumble has its controls reversed, as it was designed for use with the Game Boy Color. However, the GBA games Yoshi Topsy-Turvy and WarioWare: Twisted! work properly in both top-loading and bottom-loading systems as both games were designed to automatically calibrate themselves according to the cartridge's orientation. The e-Reader device sticks out awkwardly on the SP; gamers must turn the system around to scan cards correctly, and the link port sticks out.

See also

- Game Boy
- Game Boy Advance
    - Game Boy Micro
- Nintendo DS

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Game Boy micro

Manufacturer

Nintendo

Type

Handheld game console

Generation

Sixth generation era

First available

September 13, 2005 (Japan)

Media

Cartridge

Controller input

{{{controllers}}}

Units sold

1 million

Game Boy micro (with a lowercase **micro**) is a handheld game console developed and manufactured by Nintendo. The system is the second major redesign of the Game Boy Advance, and is marketed towards the "image conscious"[1] consumer, with emphasis placed on its small size and sleek design. According to Nintendo of America executive Perrin Kaplan, its codename during development was **Oxy**. The unit also has a model name of "OXY-001" on the back of the unit.

The Micro was officially unveiled by Nintendo's vice president of sales and marketing, Reggie Fils-Aime, at the company's E3 press conference on May 17, 2005. The system was released in Japan on September 13, 2005 and in North America on October 2, 2005. It was released in Europe on November 4, 2005 and Australia on November 3, 2005. It will also be released in China but the release date is uncertain.

The system retails for US$99 in the United States, compared to US $79 for the Game Boy Advance SP. Later, the Black and Silver Game Boy micros' price has been dropped to US$89. In Japan, the new handheld runs for about ¥12,000, ¥3,000 more than the SP. The system is expected to sell for €99/£69 in Europe. In Australia, although its retail price is AUD $149.95, it has been selling for AUD $129.

Design and specifications

The Game Boy micro retains most of the functionality of the Game Boy Advance SP, but with an updated form factor. It is smaller than previous Game Boy systems; slightly bigger and about two thirds the weight of an iPod mini. Additionally, it features a backlit screen with the ability to adjust the brightness so as to adapt to lighting.

The Game Boy micro also features a removable face plate that allows consumers to purchase alternative designs.

- **Dimensions:** 50 x 101 x 17.2 mm (2 x 4 x 0.7 inches). It is almost the size of an average credit card.
- **Weight:** 80 g (2.8 ounces)
- **Processor:** 32-bit 16.8-MHz ARM processor (ARM7TDMI).
- **Colors:** Varied colors and designs through a removable and customizable face plates.
- **Screen:** 51 mm /2 [in (compared to 74 mm / 2.9 in) GBA), backlight with adjustable brightness. According to the Micro's press release, the "best Game Boy screen ever".
- **Battery:** built-in rechargeable lithium-ion battery.
- **Headphones:** supports standard headphones without additional accessories.

The Micro also has a two-way switch on its right side for adjusting volume up or down. By holding down the L shoulder button, the switch can also be used to adjust the backlight between five levels of brightness.

One of the best features which fits in with the ipod generation is that there is an MP3 catridge which can plug in to the game-pak slot for music. This will boost sales to up to 50% knowings its a cheap to run MP3. The catridge of Play-Yan will have a memory card slot aswell which slots into the catidge and hence, this will mean you can update or down-grade the memory storage.

Software

The Game Boy micro is compatible with all Game Boy Advance cartridges, including Game Boy Advance Video cartridges. Unlike the Game Boy Advance and Game Boy Advance SP, however, the Micro does not support games made for the original Game Boy or Game Boy Color. The e-Reader card series is also officially incompatible, although it fits as stated by IGN.

As with the Game Boy Advance and Game Boy Advance SP systems, there are no regional lockouts on software, so North American games can be played on Japanese hardware and vice versa.

Packaging

In Japan, the handheld is available in seven colors/styles; black, blue, purple, and silver, along with three limited edition styles: one based on the original Famicom video game console's controller, a blue bodied model with a faceplate based on Final Fantasy IV], and a red bodied model with a black faceplate containing the silhouette of the famous Pokémon Pikachu. In the United States, Micro is available in two colors, each sold with two interchangable faceplates included: black with "Ammonite" and "Ladybug" faceplates, and silver with "Flame" and "Camouflage" faceplates.

A new "20th Anniversary" edition was released on December 5, which is like the Famicom style Micro, but renamed and lacking the distinctive 20th Anniversary symbol featuring the iconic Mario . In Europe and Australia, the handheld is available in four different colours, with one matching faceplate: silver, green, blue and pink. here are reportedly no plans to sell additional faceplates in the UK.

Release and Sales

- The Game Boy micro sold over 170,000 units during its first days in Japan.
- The North American release has fallen to criticism; with a formal release of September 19, many stores threw the date out the window and many have delayed it until September 26 or as late as September 30.
- The Game Boy micro has currently sold over 1,000,000 units worldwide.(part of the 70 million units sold worldwide of the game boy advance series)

Reaction

Criticism

Because the Micro is so small, it relies heavily on proprietary (nonstandard) ports. There has been much criticism that many Game Boy Advance functions do not work on the Micro. While the headphone jack port has been restored, gamers must buy two link cables (GBM-GBM and GBM-GBA) to restore full multiplayer functionality. The Nintendo.com store lists the two cables at $9.95 and $7.95 respectively. The GameCube-Game Boy Advance cable also does not work with the Micro. Additionally, the shrunken power port means that the SP/DS AC adapter cannot be used, so it is not as readily swappable or replacable if the GBM adapter is lost, since many people already own an SP or DS.

Consumer conversion to proprietary accessories is an idea that is no different from any other Game Boy release, as buyers generally had to upgrade their accessories along with the new unit for the releases of Game Boy Pocket, Game Boy Color, and Game Boy Advance. For an item that is considered part of the Game Boy Advance family, however, many of the differences were criticized as being too major.

The lack of GB/GBC backwards compatibility has also been heavily criticized. Without the backwards compaibility, many gamers have said that the Micro is more novel than useful, especially with the functionality issues. Critics have noted that the Nintendo DS can also play GBA games with an admittedly dimmer backlight, but with the added ability to play DS games.

Price is an another factor in criticism for the Micro. At $99, the Game Boy Micro is the same price as a Nintendo GameCube (as of the 2005 holiday, with a free copy of Mario Party 7 and an extra controller), $20 more expensive than the backlit and original Game Boy Advance SP and $30 cheaper than the more functional and sophisticated Nintendo DS. Many gamers have noted that they would be willing to buy a Micro if the price were lower, although Nintendo has since dropped the price of the Black and Silver models to $89.

Since the size of it is a large cause of all the above problems, and because most people see the Game Boy Advance SP as portable enough already, many wonder why Nintendo is even releasing the Micro. Given the brisk sales of the Micro, however, many people have wanted a smaller, sleeker unit.

The near-simultaneous release of the backlit model of the Game Boy Advance SP has also drawn criticism over the purpose of the Micro. There have been concerns that Nintendo may cannibalise its own market. Some gamers who were hesitant to get the Micro due to the smaller screen are now flocking to the improved SP. The new improved SP sports a backlight equal to the GBM, but retains most original functionality and the same screen. However, the backlit SP runs at 50 Hz, rather than 60 Hz, which can result in motion blur in fast-paced games.

Lastly, the North American launch itself has been criticised. Early on, Nintendo did not create any major hype through widespread marketing, and both Nintendo and retailers clashed on the release dates. The official Nintendo release date was September 19, but many stores did not have it in stock until the week after. After the unit was in stores, however, a fair marketing campaign appeared on television, in magazines and in comic books.

Praise

The Game Boy micro has been praised for returning to the original Game Boy Advance horizontal layout. Many people disliked the vertical layout (used on the Game Boy and SP), because they found it uncomfortable to fit their hands so close together when operating the controls. The Micro's **A** and **B** buttons are also much larger than any previous model, making them easier to use.

The Game Boy micro's backlit screen, which is superior to the Game Boy Advance SP's, has been praised for its visibility. Like the Nintendo DS's backlight, every pixel is evenly and clearly lit due to a smaller dot pitch, but the brightness is adjustable. Due to the size of the screen being smaller than is the standard for Game Boy Advance games, graphics are much sharper than they are on any previous model. The screen is also significantly brighter than even the Nintendo DS. The release of a Game Boy Advance SP with a brighter screen has made this point somewhat moot. However, it comes at the cost of a lower refresh rate (50 Hz), while the Micro perserves the original 60 Hz rate.

Despite the medicore launch and perceived problems, gamers are pleased that Nintendo has not ignored the Micro. Nintendo also has created a host of new accessories, including a micro Play-Yan.

The faceplates have also been well-received. Previous models, especially the SP, had problems with dust under the screen, and trying to open the unit up to clean it off voided the warranty and was dangerous. Owners can now lift up the faceplate to wipe away dust and replace it when it becomes too worn.

The shell itself is also much smaller and thinner than the Game Boy Advance SP, making it the most portable modern handheld so far.

References

1. ^ "*Nintendo's Game Boy Micro Projects Dynamic New Image*", Nintendo.com, May 17, 2005.
2. ^ "*North American Game Boy website*", accessed November 16, 2005, and November 30, 2005.

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Gizmondo

Gizmondo

Manufacturer

Tiger Telematics

Type

Handheld game console

Generation

Seventh generation era

First available

19 March 2005

Media

SD, MMC

Online service

GPRS

The **Gizmondo** is a 128 bit handheld gaming console with GPRS and GPS technology, produced by Tiger Telematics. The Gizmondo includes a GPS module for in-car navigation (coming Autumn 2005) also used for multiplayer real time games used to track movements of your opponents. The Gizmondo also holds within its small interior a VGA camera mounted on the rear. It can send SMS/MMS messages, voice calls and email (coming Autumn 2005), play MP3/WAV/MIDI music, play WMV/MPEG4 video, and a variety of 3D games.

Releases

Gizmondo was released in the United Kingdom on 19 March 2005, initially priced at £229. However, the price of the unit has since fallen to £129 if the user agrees to be sent a maximum of three 10 to 30 second advertisements per day through the Gizmondo Smart Ads service. These adverts will often include offers at the end of them, for example coupons, or free music downloads and will only appear when the user returns back to the main menu and not interupt any game or media playing. The device is due for release in several mainland

Europe countries in Q1 2006, while it has now been launched on October 22, 2005 in North America. A catalog of over 90 games are in production for the Gizmondo with more added monthly, and it is predicted that at least 30 new games will have been released by early 2006. The games line up includes; The Great Escape, Age of Empires, Tron 2.0, Conflict Vietnam, Colors (Worlds first GPS game) as well as many others. The games portfolio is being increased through Tiger's recent purchase of Warthog and publishing deals made with SCi, Electronic Arts, UbiSoft and other major publishers.

The Gizmondo is currently available from the Gizmondo flagship store on London's Regent Street, also via Gizmondo's online shop, and other highstreet and online retailers (such as Argos, Dixons, Currys, John Lewis among others.).

Functionality and specifications

The Gizmondo can play games, music tracks and movies, take and store digital photos and be used like a mobile phone to send text, multimedia and e-mail messages, voice calls will be coming via a bluetooth headset due out in the fall. Tiger have recently begun demonstrating augmented reality-based games using the Gizmondo's digital camera.

In the UK, the phone service to enable people to send messages is being provided by pre-pay Vodafone accounts bundled in with the device. It can also access the Global Positioning System for use as a navigation aid. There are also plans to support a variety of location-based services, for example. GPRS and Bluetooth wireless connections are intended to provide multiplayer gaming.

The Gizmondo's Camera also includes an added Gyroscopic Function. It will be used in FPS, action-adventure, and puzzle games. In FPS games The Gizmondo is turned instead of using a thumbstick or joystick.

Gizmondo is powered by a 400 MHz ARM9 processor and has a 2.8 inch 320x240 pixels TFT screen and an NVIDIA 128 bit GoForce 3D 4500 GPU featuring a programmable pixel shader, hardware transform engine and 1280KB of embedded memory. The GPU was added relatively late in the system's design, causing some delays for launch titles and the system, as they were redesigned.

The system's appearance and ergonomics were created by industrial designer Rick Dickinson, who worked in a similar role on various Sinclair products such as the ZX Spectrum.

Tiger Telematics plans to release a widescreen Gizmondo. It will have upgrades like wi-fi and TV-OUT support. Critics say that people will wait for the widescreen Gizmondo when it comes out instead of getting the regular one.

Competition

The Gizmondo competes for marketshare with handheld consoles by Nintendo (the DS and Game Boy Advance) and Sony (the PlayStation Portable).

Controversy

Shortly after Gizmondo was released in America, a newspaper printed a story linking Gizmondo Europe Executive Officer, Stefan Eriksson, with the Uppsala Mafia. In light of these findings Eriksson resigned and at least two other resignations were reported in connection with this case. One of those resignations came from Carl Freer, the Chairman of the board and a director, who co-owned along with Eriksson Northern Lights Software Limited. Northern Lights was paid a large sum of money to create Chicane and Colors, two Gizmondo games that were actually developed by Gizmondo Europe itself. Freer paid the money back to Gizmondo in order to stop an investigation into the matter. The Gizmondo company itself denied knowing anything about Eriksson mafia ties.

See also

- Nintendo DS
- PlayStation Portable
- Nokia N-Gage

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Nintendo

Nintendo Co Ltd

Type

Public

Founded

November 6, 1889

Location

HQ in Kyoto, Japan

United States: HQ: Redmond, Washington, Offices: Atlanta, Georgia and San Diego, California Canada: HQ: Richmond, Vancouver, British Columbia, Offices: Toronto, Ontario Europe: Großostheim, Germany Australia: HQ: Scoresby, Melbourne, Victoria, Offices: Sydney, New South Wales China: Suzhou (as iQue Ltd.)

Key people

Satoru Iwata: president; Hiroshi Yamauchi: former president and chairman; Minoru Arakawa and Howard Lincoln: former heads of American division; Shigeru Miyamoto: noted game designer

Industry

Video games, card games

Products

Hanafuda, Color TV Game, Game & Watch, NES, SNES, Game Boy (Pocket, Light, Color, Advance, Advance SP, Micro), Virtual Boy, Nintendo 64, GameCube, Nintendo DS, Nintendo Revolution, numerous video games

Employees

approx. 2,977 (as of 2003)

Website

www.nintendo.com

Nintendo (Japanese: û), ËóÆóÉü NintendM; NASDAQ: **NTDOY**, TYO: **7974**) is a Japanese company originally founded on November

6, 1889 by Fusajiro Yamauchi to produce handmade hanafuda cards, for use in a Japanese playing card game of the same name. In the mid-twentieth century, the company tried several small niche businesses, such as a love hotel and a taxi company. Over the years, it became a video game company, growing into one of the most powerful in the industry. Aside from video games, Nintendo is also the majority owner of the Seattle Mariners, a Major League Baseball team in Seattle, Washington. Nintendo has also purchased majority ownership of Gyration, a company specializing in gyros and motion sensors, for assistance in designing the controller of the Nintendo Revolution.

Nintendo has the reputation of historically being the longest running company in the video game console market and the most influential and well-known console manufacturer, as well as being the dominant leader of the handheld console market. They began in the Japanese market in 1983, the North American market in 1985, and the European market in 1986. Over time Nintendo has manufactured five TV consoles — the Famicom/NES, the Super Famicom/Super NES, the Nintendo 64, and the present GameCube and the upcoming Nintendo Revolution — and many different handheld portables, including seven versions of their popular Game Boy, the Game & Watch, the Virtual Boy, the Pokémon Mini, and the Nintendo DS. They have also published over 250 games, developing at least 180 of them, and have sold over 2,000,000,000 games worldwide.

History

Main articles: History of computer and video games

1889–1968

Nintendo started as a small Japanese business by Fusajiro Yamauchi near the end of 1889 as Nintendo Koppai. The name, "Nintendo" roughly translates as "leave luck to heaven" or "in heaven's hands". Based in Kyoto, Japan, the business produced and marketed a playing card game called Hanafuda. The cards, which were all handmade, soon began to gain popularity and Yamauchi had to hire assistants to mass produce cards to keep up with the high demand.

In 1929, Yamauchi retired from the company and allowed his son-in-law, Sekiryo Yamauchi, to take over the company as president. In 1933 Sekiryo Yamauchi established a joint venture with another company and thus renamed the company Yamauchi Nintendo & Co. In 1947 Sekiryo established the company *Marufuku Co. Ltd* to distribute the Hanafuda cards, as well as several other brands of cards that had been introduced by Nintendo.

Hiroshi Yamauchi, the grandson of Sekiryo Yamauchi, took office as the president of Nintendo during the year of 1949. He renamed Yamauchi Nintendo & Co. Nintendo Playing Card Company, Ltd., and, in 1951 he renamed their distribution company, Marufuku Co. Ltd., to *Nintendo Karuta Co. Ltd.*

In 1959, Nintendo struck a deal with Disney to have them allow Nintendo to use Disney's characters on Nintendo's playing cards. The deal was a success and sold at least 600,000 cards in a single year.

Following this, in 1963, Nintendo Playing Card Company Ltd. was renamed Nintendo Co. Ltd. by Hiroshi and Nintendo began to experiment in other areas of business. During the period of time between 1963 and 1968, Nintendo founded a taxi company and a "love hotel", as well as producing toys, games and several other things (including a vacuum cleaner). Both the taxi company and love hotel ended in failure and were eventually closed.

1969–1980

In 1969 Nintendo established a games division within their company. In the following years, Nintendo produced several successful toys and games, the most notable being their light guns and Ultra Hand, an arm expansion toy. Most of these inventions were the ideas of a new Nintendo employee, Gunpei Yokoi.

In 1973 Nintendo expanded on their light gun idea with the introduction of The Laser Clay Shooting System, which used solar cells to simulate clay pigeon shooting. The Laser Clay Shooting System was another huge success. In 1974 the same idea was reused with the introduction of Wild Gunman, which was a laser gun game where a player would attempt to draw a light gun and shoot at an image of a gunman before the gunman "shot back". Wild Gunman was exported to the USA and Europe.

During 1975 Yamauchi began doing research into a new American trend in which one could connect a device to a television in order to play simple games, called video games. Other companies, such as Atari, had had some success in this field and Hiroshi decided it would be a good business venture for Nintendo to delve into. In the same year, he negotiated a deal with Magnavox to allow Nintendo to produce and sell the Magnavox Odyssey, a simple video game console. Since Nintendo didn't have the necessary equipment to manufacture these machines, they created a pact with Mitsubishi, who would manufacture them.

With Nintendo's new relationship with Mitsubishi, in 1977 the two companies released their joint effort video game machine, the Color

TV Game 6, a collection of six simple versions of tennis, which sold millions of units. 1977 is also the year Shigeru Miyamoto joined Nintendo, working as an art designer for arcade games.

Soon, Nintendo released several other successful home video game consoles, including an advanced version of the Color TV Game 6, called the *Color TV Game 15*, a racing game, and another game called Kusure, or *Blockbuster*.

In 1979 Nintendo began design work for what was to be their first handheld game console, the Game & Watch, which was another idea of Gunpei Yokoi. It was released in 1980, which is also the year that Nintendo announced the addition of a new wholly owned subsidiary, located in New York, named *Nintendo of America*. The Game & Watch proved a popular innovation and was successful far beyond any of Nintendo's previous ventures.

1980–1982

Also in 1980, Nintendo began the production of arcade games. These arcade games were mostly shoot-'em-ups sometimes using Nintendo's light gun, going under names such as *Hellfire* or *Sheriff*. However, this direction changed when Shigeru Miyamoto was given the task of repurposing hardware left over after the commercial failure of the arcade alien shoot-'em-up Radar Scope. Mr. Miyamoto went in a completely different direction and began work on Donkey Kong, with the help of Yokoi, which was an arcade game starring the attempts of a carpenter trying to rescue his girlfriend from an ape. Although originally frowned upon by fellow Nintendo workers, the release of Donkey Kong was a huge success and the game sold over 65,000 units, making it the most popular arcade game of the year.

During the same year, Nintendo, probably inspired by the success of Atari and several other companies, set to work on a new, more advanced multicartridge video game console. They knew that in order for the system to be successful, since other companies had already released multicartridge systems, their console would have to be better than the rest, and still carry a feasible price.

In 1982 Nintendo released their sequel to Donkey Kong, Donkey Kong Jr. as an arcade game. Although not selling as many units as the original Donkey Kong, Donkey Kong Jr. still sold well, selling around 35,000 units. This was also the year they established Nintendo of America Inc. in Redmond, Washington and merged the New York subsidiary into it.

1983–1989

In July 1983, Nintendo released their Famicom (Family Computer) system in Japan, which was their first attempt at a cartridge-based video game console. The system was very successful, selling over 500,000 units within two months. The console was also technically superior and inexpensive when compared to its competitors, priced at about $100 USD. However, after a few months of the consoles selling well, Nintendo received complaints that some Famicom consoles would freeze when the player attempted to play certain games. The fault was found in a malfunctioning chip and Nintendo decided to recall all Famicon units currently on store shelves, which cost them almost half a million dollars USD.

It was also in 1983 that Nintendo planned to release the Famicom in the USA. In the USA, however, the video game market had almost completely died out due to the large amount of low quality games. Nintendo decided that to avoid this, they would only allow games that received their "Seal of Quality" to be sold for the Famicom, using a 10NES lockout system to prevent unlicensed games.

By 1984 the Famicom had proven to be a huge continued success in Japan. However, Nintendo also encountered a problem with the sudden popularity of the Famicom — they did not have the resources to manufacture games at the same pace they were selling them. To combat this, Yamauchi decided to divide his employees into three groups, the groups being Research & Development 1 (R&D 1), Research & Development 2 (R&D 2) and Research & Development 3 (R&D 3). R&D 1 was headed by Gunpei Yokoi, R&D 2 was headed by Masayuki Uemura, and R&D 3 was headed by Takeda Genyo. Using these groups, Yamauchi hoped Nintendo would produce a low amount of high quality games rather than a high amount of average quality games.

In 1985 Nintendo announced they were going to release the Famicom worldwide – except under a different name – the Nintendo Entertainment System (NES) – and with a different design. In order to ensure the localization of the highest quality games by third-party developers, Nintendo of America limited the number of game titles third-party developers could release in a single year to five. Konami, the first third-party company that was allowed to make cartridges for the Famicom, later challenged this rule by creating a spinoff company, Ultra Games, to release additional games in a single year, although other manufactures followed the same tactic as Konami. In this year, Super Mario Bros. was also released for the Famicom in Japan and became a large success.

Nintendo test marketed the Nintendo Entertainment System in the New York area on October 18, 1985. Following immediate success, they soon began shipping the NES nationwide in February 1986, along with 15 games, sold separately. In the U.S. and Canada, it outsold its competitors on a ten to one scale. This was also the year that Metroid (Japan) and Super Mario Bros. 2 (the Japanese version) were released.

In 1988, Nintendo of America unveiled Nintendo Power, a monthly news and strategy magazine from Nintendo that served to advertise new games. The first issue published was July/August edition, which spotlighted the NES game Super Mario Bros. 2. Nintendo Power is still being published today with its two-hundredth issue coming in Feb. '06.

In 1989, 100 years after the company was started, Nintendo released the Game Boy, along with the accompanying game Tetris (widely considered one of the greatest games of all time). The Game Boy sold extremely well, eventually becoming the best selling portable game system of all time, a record it holds to this day. Later, Super Mario Land was also released for the Game Boy, which sold 14 million copies worldwide. 1989 was also the year that Nintendo announced a sequel to their popular video game console, the Famicom, to be called the Super Famicom.

By the end of the 1980s the courts found Nintendo guilty of anti-trust activities because it had abused its relationship with third party developers and created a monopoly in the gaming industry by not allowing developers to make games for any other platforms. They changed this rule during the Super NES era, allowing Sega to start a massive console war against Nintendo with the Sega Genesis and Game Gear. This would occur once more in 1996, when Sony released the PlayStation.

1990–1995

The Super Famicom was released in Japan on November 21st, 1990. The system's launch was widely successful, and the Super Famicom was sold out across Japan within three days. In August 1991, the Super Famicom was launched in the U.S. under the name "the Super Nintendo Entertainment System" (SNES). The SNES was released in Europe in 1992.

The Super Nintendo Entertainment System followed in the steps of its predecessor, sporting a relatively low price and somewhat high technical specifications for its era. The controller of the SNES had also improved over that of the NES, as it now had rounded edges and several new buttons.

In Japan, the Super Famicom easily took control of the gaming market. Despite a slow start, the SNES in North America eventually overtook its competition, the Sega Genesis, thanks to franchise titles such as Super Mario World, The Legend of Zelda: A Link to the Past, Street Fighter 2, and the Final Fantasy series. In the U.S., the Genesis barely outsold the SNES, however total worldwide sales of the SNES were higher than the Genesis.

1992 was the year in which Gunpei Yokoi and the rest of R&D 1 began planning on a new virtual reality console to be called the Virtual Boy. Hiroshi Yamauchi also bought shares of the Seattle Mariners in 1992.

In 1993 Nintendo announced plans to develop a new 64-bit console codenamed Project Reality that would be capable of rendering fully 3D environments and characters. In 1994, Nintendo also claimed that Project Reality would be renamed Ultra 64 in the US. The Ultra 64 moniker was unveiled in arcades on the Nintendo branded fighting game "Killer Instinct" and the racing game Cruisin' USA. Killer Instinct was later released on the SNES. Soon after, Nintendo realized the mistake they had made in choosing a name for their new console that the Konami corporation owned the rights to. Specifically, only Konami would have the rights to release games for the new system called Ultra Football, Ultra Tennis, etc. So, in 1995 Nintendo changed the final name of the system to the Nintendo 64, and announced that it would be released in 1996. They later showed previews of the system and several games, including Super Mario 64, to the media and public.

1995 is also the year that Nintendo purchased part of Rareware, a choice that would prove to be a wise investment.

In the mid-90s Nintendo of America eased up on its stringent policies on blood and violence. After Sega created the Mega CD (Sega CD in North America) add on for its 16-bit machine, Nintendo initially contracted with Sony to develop an add-on CD-ROM drive for the SNES, but then they had second thoughts: afraid that Sony will get all the profit from the CD-ROM media, and also surprised at the failure of Sega's Mega CD, Nintendo terminated the contract and went with Philips. Nintendo announced their alliance with Philips at the same conference that Sony announced their CD-ROM drive. Nothing happened about the add-on drive in regard to the SNES, but Sony took the time and research and began to spin it off into a new product, the PlayStation.

In 1995 Nintendo released the Virtual Boy in Japan. The console sold poorly, but Nintendo still said they had hope for it and continued to release several other games and attempted a release in the U.S., which was another disaster.

Also in 1995, Nintendo found themselves in a competitive situation. Competitor Sega introduced their 32-bit Saturn, while newcomer Sony introduced the 32-bit PlayStation. Sony's fierce marketing campaigns ensued, and it started to cut into Nintendo and Sega's market share.

1996–2001

On June 23 1996, the Nintendo 64 (N64) was released in Japan and became a huge hit, selling over 500,000 units on the first day of its release. Nintendo released an add-on to the Nintendo 64 in Japan, titled the Nintendo 64DD, on December 1, 1999. On September 29 1996, Nintendo released the Nintendo 64 in the U.S. and Canada, and it too was a success.

Nintendo followed with the release of the Game Boy Pocket, a smaller version of the original Game Boy. About a week after the release of the Game Boy Pocket, Gunpei Yokoi resigned from his position at Nintendo. Gunpei Yokoi helped in the creation of a competitor system named the Wonderswan, utilizing the skills he gained in the creation of the Game Boy.

In 1997, Pocket Monsters (known as "Pokémon" in the North America and Europe) was released in Japan to a huge following. The Pokémon franchise was proving so popular that for a brief time, Nintendo took back their place as the supreme power in the games industry. October 13, 1998 was the day that Game Boy Color was released in Japan, with releases in North America and Europe a month later. Days before Game Boy Color was released in Japan, Gunpei Yokoi - the original creator of Game Boy - died tragically in a car accident at the age of 57.

Nintendo released the Game Boy Advance in Japan on March 21, 2001. This was followed by the North American launch on June 11 and the European launch on June 22. Nintendo released their GameCube home video game console on September 14, 2001 in Japan. It was released in North America on November 18th of 2001 and on May 5, 2002 in Europe.

2002–present

In 2002, Hiroshi Yamauchi stepped down as the president of Nintendo and named Satoru Iwata his successor. Also, Nintendo and Chinese-American scientist Dr. Wei Yen co-founded iQue, a company that manufactures and distributes official Nintendo consoles and games for the mainland Chinese market, under the iQue brand.

In May 2004, Nintendo announced plans to release a new brand of handheld, unrelated to the Game Boy — featuring two screens, one of which was touch-sensitive. The Nintendo DS, released on November 21 2004, received over three million pre-orders. In addition to the touch screen, the DS can also create three-dimensional graphics, capable of surpassing those of the Nintendo 64, although it does not include hardware support for texture filtering which results in more pixelated graphics than on the Nintendo 64.

President Satoru Iwata merged all of Nintendo's software designers under the EAD division; this was done to allocate more resources to Shigeru Miyamoto. As of 2005 Nintendo's internal development divisions are comprised of four groups (read Nintendo development divisions for more information).

- Nintendo Entertainment Analysis & Development
- Nintendo Integrated Research & Development
- Nintendo Software Production & Development
- Nintendo Technology & Development

On May 14, 2005, Nintendo started up its first retail store in Rockefeller Center in New York City, called Nintendo World. It is two stories tall, and contains many kiosks of GameCube, Game Boy Advance, and Nintendo DS games. There are also display cases filled with things from Nintendo's past, including Hanafuda playing cards, Nintendo's first product. They celebrated the grand opening with a block party in Rockefeller Plaza. They plan to open the same store in other major U.S cities, those announced are Los Angeles, Dallas, Boston, and Philadelphia. Potential cities are San Francisco, St. Louis, Washington DC, and Chicago.

At E3 in May of 2005, Nintendo displayed the first prototype for their 'next-generation' system, codenamed the Nintendo Revolution, though hiding its controller until the Tokyo Game Show later that year.

Other consoles

Nintendo 64

In 1995, Nintendo released a third console, the **Nintendo 64** (N64), which featured vastly improved three dimensional graphics and a new analog stick (called the control stick). Nintendo chose to remain with the cartridge medium, a surprising move, especially considering their competition's choice of emerging CD-ROM storage mediums. This may have adversely affected the amount of games published on the Nintendo 64; CD-ROMs are cheaper to produce than cartridges, meaning cheaper costs for the third party publishers — since Nintendo did not choose to use CD-ROMs, publishers would be more swayed to publish for Sony's PlayStation, which did use CD-ROMs. However, Nintendo retained the cartridge in light of the fact that compared to CD-ROMs, there are little to no load times and that cartridges are to an extent more expandable and can have data directly saved to them, hence abolishing the absolute need for a device such as a memory card. Despite these advantages, the drawbacks were also rumored to be the impetus for Squaresoft (now Square Enix) stopping development of any further games for Nintendo, including their well-known Final Fantasy series, and moving over to the Sony PlayStation, and later the PlayStation 2.

Nintendo used the code names *Project Reality* and *Ultra 64* prior to the system's actual release, and these names are still used by some people. Nintendo also touted new "innovative" and "groundbreaking" elements of the Nintendo 64 — such as its four controller ports, an analog stick, 64-bit processor, and online capabilities. The online capabilities never came out in the rest of the world, but did well in Japan. The expansion for online would have plugged into the Ext. port on the bottom.

The first 3D Mario game was introduced on the N64 as Super Mario 64, which has been the archetype for almost all 3D console games to this day. Other popular games were GoldenEye 007, which ushered in a new era for console first-person shooter games, and The Legend of Zelda: Ocarina of Time—widely considered one of the best games of all time. This system's games are also significant as it was here that the power of the second-party was first recognized: Rareware produced several of their most lauded games for this console (including the aforementioned GoldenEye, and also Perfect Dark and Banjo-Kazooie.)

Nintendo GameCube

Main articles: Nintendo GameCube

The **Nintendo GameCube** is Nintendo's fourth generation console and their first disc-based console; it was released in Japan on September 14, 2001, the U.S. on November 18, 2001, in Europe on May 3, 2002, and in Australia on May 17, 2002. The European launch boasted 20 titles at launch, which included Star Wars: Rogue Squadron 2: Rogue Leader, Wave Race: Blue Storm, Luigi's Mansion, Tony Hawk's Pro Skater 3 and International Superstar Soccer 2.

Nintendo continued many of their popular franchises on the system, including Mario, The Legend of Zelda, Star Fox, Metroid, and Super Smash Bros.. The Nintendo GameCube is also responsible for several new franchises, including Pikmin, Eternal Darkness: Sanity's Requiem, and P.N.03. The GameCube also revived the Metroid series with the release of Metroid Prime and its direct sequel, Metroid Prime

2: Echoes; although the games are no longer in the same style as the older Metroid games with the introduction of three dimensional graphics and a first-person shooter style. Nintendo had also gained exclusivity rights for the Resident Evil series and Capcom has released several GameCube-only Resident Evil titles, including Resident Evil 4 which is critically acclaimed to be the best in the series. Eventually Capcom backed out and allowed the Resident Evil titles to be released on the PS2 system, including the once GameCube exclusive Resident Evil 4. The GameCube also saw the return of Square Enix, the home of the flagship Final Fantasy series, as they released another Final Fantasy spinoff called Final Fantasy: Crystal Chronicles for the now DVD-ROM functional GameCube as well as Final Fantasy Tactics Advance for the Game Boy Advance.

In the current console wars, it is in firm second place in Japan, while taking joint third place with the Microsoft Xbox in the American and European markets. In Australia it is in last place. Commentators have noted that whilst both Sony and Microsoft are losing money from every console they sell, Nintendo makes a profit from every GameCube sold. As of June 2005, Nintendo has shipped 18.76 million GameCubes worldwide.

Nintendo "Revolution"

Main articles: Nintendo Revolution

As with other console manufacturers in the industry, Nintendo is currently developing a new game console, codenamed "Revolution", that is expected to be released in 2006 for under $300 USD. With Revolution, Nintendo has made their plans clear that they hope to change the way people watch and play video games by taking gaming into a new direction instead of merely upgrading hardware for the benefit of graphics.

The console is Nintendo's sleekest and smallest yet, about the size of three DVD cases stacked on top of each other; however, Nintendo has stated that the unveiled system is a prototype and the final product may be even smaller. One of the many (though mostly still unknown) revolutionary aspects of the system comes from its unconventional controller, which in its basic form is shaped like a television remote control and includes a number of features, most notably, the direct pointing device which allows the system to understand six directions of movement (up, down, left, right, forward, and backward) and it can sense the angle of the controller. The controller additionally features a port located on the bottom which several accessories may use. So far Nintendo has shown an analogue stick (called "nunchuck" by NCL president Iwata during the 2005 TGS keynote) that can connect to that port and can be used concurrently with the main controller. Nintendo has also confirmed that the Revolution will not support High Definition, unlike Sony and Microsoft. Nintendo is not focusing primarily on graphics for the new generation, but instead will concentrate on the quality of gameplay.

Thus far, it has been confirmed that the Revolution will be able to play NES, SNES, and N64 games, which will be downloadable for a fee through the Internet via Nintendo's online service, which will also offer downloadable demos for Revolution and the Nintendo DS. As well, it will also be backward compatible with GameCube discs, and will boast a "docking station" for GameCube accessories. The Revolution is confirmed to be able to play DVDs out-of-the-box, but an additionally purchased dongle is required to enable this feature. It has also been confirmed that the console will have the capability to be connected to a standard television, as well as a computer display.

Handheld consoles

Game Boy

Main articles/the Nintendo handheld console lineage:

- Game Boy
    - ○ Game Boy Pocket
    - ○ Game Boy Light
- Game Boy Color
- Game Boy Advance
    - ○ Game Boy Advance SP
    - ○ Game Boy micro

Introduced in 1989, and continuing strong today, were Nintendo's portable **Game Boy** systems. With several redesigns and improvements, including **Pocket**, **Light**, **Color**, **Advance**, **Advance SP**, and **Micro** versions, the Game Boy is the single most successful, and oldest portable video game platform still in production. **Game Boy Evolution** refers to the as-yet-unannounced successor to the Game Boy Advance. The Game Boy has been known for putting over a dozen other portable systems out of business (including Nintendo's other attempts such as the Virtual Boy). Due to low battery consumption, durability, and a library of over a thousand games, the Game Boy has been on the top of the portable console food chain since its inception and made Nintendo the domineer of the handheld console market.

Slowing sales of the Game Boy were remedied by the introduction of the Pokémon game, which started a phenomenon of top selling video games, movies, merchandise, and TV shows. The Pokémon phenomena helped and continue to help rocket Game Boy sales all around the world. The Game Boy line already sold more than 200 million units worldwide.

Nintendo DS

Main article: Nintendo DS Nintendo released their **Nintendo DS** (***Dual Screen***, although Reggie Fils-Aime called it the ***Developer's System*** to show that developers could make use of it in varying ways) handheld game console first in the United States on November 21, 2004, then in Japan on December 2 2004 and later on March 11, 2005 in Europe. In the U.S., shipments of the DS reached 500,000 within the first week, and in Japan, the figures were even more impressive, reaching the same figure within four days of its launch. It has also proven to be the fastest-selling console in European history, having sold over 1 million units in six months (250,000 of those units in Great Britain alone).

The Nintendo DS features two backlit LCD screens, the bottom of which is touch sensitive, which can create a unique style of gameplay (see Kirby: Canvas Curse or WarioWare: Touched!). It also features a built in microphone and the ability to connect up to 16 Nintendo DS systems together wirelessly. Included in the system's firmware is a whiteboard-able local WAN instant messaging client without identity called "Pictochat," and all editions of the system have bundled either the demonstration version of Metroid: Prime Hunters or the commercial versions of Super Mario 64, Mario Kart DS, or Nintendogs, each of which have local wireless play. The DS can also play software designed originally for the Game Boy Advance, though since the DS lacks the serial port from earlier systems in favor of the newer wireless connection, no legacy games can be played in a networked form. The Nintendo DS wireless hardware can also operate in 802.3 infrastructure mode in conjunction with (most) 802.11b or 802.11g hardware, at 2mbps (some routers cannot connect at this low a rate, though the company provides a special-purpose computer accessory to provide zero hassle uplinks.) This capability allows for several other connectivity options, realized in the Nintendo Wi-Fi connection and the software under development for the DS WiFi Bounty. Though no commercial software yet implements it, amateur software has demonstrated the machine as able to connect to a traditional 802 wireless network over normal protocols, and there is a functioning implementation of IPv4 with both TCP and UDP stacks under development by Stephen Stair. As of December 2005, no local area wireless game offers more than 8 simultaneous players, and no internet game more than four; this is, however, a limitation of the software, not the hardware. Furthermore, because the Wi-Fi Connection is actually a connection between the DS and a PC, the theoretical limit of players over WiFi connection is limited solely by bandwidth and QoS issues (though, due to the nature of the addressing scheme used by hardware, the local wireless play is hard-limited at 16 clients.)

On several occasions, first at E3 2003, Nintendo has unilaterally stated that the moniker "DS" refers to the *D*eveloper's *S*creen, which was explained at length when the touchscreen was first revealed as reference to the touchscreen's potential to "invent" new controllers on demand for theoretically new avenues of gaming. However, because the name was already known and because the system was known to offer two screens, the rumor that the name meant "Dual Screen" surfaced before the proper name was announced, and has persisted since as the most common explanation (though incorrect) for the device's title. This common mistake is roughly parallel to the AGB versus GBA naming argument which had erupted over Nintendo's previous handheld game system.

At the Game Developers Conference, Nintendo announced that they would be launching an online service for the Nintendo DS called Nintendo Wi-Fi Connection, allowing multiplayer gaming over the Internet. The online service is very different from that of its competitors' because it is free to consumers who already have an internet connection at home or know of a Wi-Fi hotspot. As of October 18th, 2005, Nintendo has partnered up with Wayport to bring free Wi-Fi access to Nintendo DS owners. As of November 14th in America, November 25th in Great Britain and on December 28th in Dublin, the launch of their Nintendo DS Internet gaming service, over 6,000 McDonald's Restaurants nationwide will become free Wi-Fi hot-spots. Nintendo UK also announced plans for over 7500 British Wi-Fi hotspots, including McDonald's restaurants, football stadiums, hotels, motorway service stations, railway stations, student unions, airports, and libraries.

At the moment, the Nintendo DS had sold more than 14 million units worldwide, easily outselling the PSP. It has sold over 4 million units in the US alone, and another 5.5 million in Japan. [2]

Other hardware

- Game & Watch
- Super Game Boy – Adapter for playing Game Boy games on the Super NES.
- Virtual Boy – The Virtual Boy used a red monochrome 3D virtual reality like system. Fewer than two dozen games were released for it in the United States.
- Nintendo 64DD – Only released in Japan, this add-on system's games are on re-writeable magnetic disks. Games released include a paint and 3D construction package, F-Zero X Expansion Kit, for creating new F-Zero X tracks and a few others. A complete commercial failure, many speculated that Nintendo released it only to save face after promoting it pre-emptively for years.
- Pokémon Mini – Unveiled in London at Christmas 2000, the Pokémon mini was Nintendo's cheapest console ever produced; with games costing £10 ($15) each, and the system costing £30 ($45). This remains the smallest games console ever made. Sales of this system were rather poor, but it is not a flop because Nintendo did make a profit on every game and system sold.
- Triforce – An arcade system based on Nintendo GameCube hardware, developed in partnership with Sega and Namco.
- Game Boy Player – An adapter for playing Game Boy games on the GameCube.
- iQue Player – A version of the Nintendo 64, with double the clock speed and downloadable games, released only in the Chinese market.

Policies

Emulation

Nintendo is known for a "no tolerance" stance against emulation of its video games and consoles. It claims that mask work copyright protects its games from the exceptions that United States copyright law otherwise provides for backup copies. Nintendo uses the claim that emulators running on personal computers have no use other than to play pirated video games, contested by some who say these emulators have been used to develop and test independently produced "homebrew" software on Nintendo's platforms, and that Nintendo's efforts fudge the truth about copyright laws, mainly that ROM copiers are illegal (they actually are legal if used to dump unprotected ROM images on to your computer for personal use), and that emulators are illegal (If they do not use copyrighted BIOS, or use other methods to run the game, they are legal). This stance is largely apocryphal, however; Nintendo remains the only modern console manufacturer which has not sued an emulator manufacturer (the most public example being Sony vs. Bleem.)

Nintendo also continues to produce the consoles with the least heavy injection protection hardware; whereas it is difficult to illegally copy a Nintendo game, it is surprisingly easy to generate novel software, which is not true of the major competing consoles. Sony, however, can also be seen as taking an amenable stance to developers, by way of its Net Yaroze console or the PS2 Linux kit; Microsoft's stance with the XBox was very stand-offish, but the XNA development site on MSDN gives the distinct impression that XNA will join its sister technologies in DirectX and MSVS as being freely available or available at low cost to the general public. That all said, the homebrew community for Nintendo consoles has traditionally been far stronger than that for competing consoles; whether that's due to the difficulty of startup cost on a new console chain compared to the strong and established Nintendo community, more suitable hardware, or simple brand loyalty remains unclear.

The revival of the NES and SNES through emulation has gradually settled down, and NES and SNES ROMs are actually getting easier to find. A common justification pirates try to make is that they believe the pirated games will never see the light of day again and because the titles are no longer on sale, no damage is done to the company. However, Nintendo's opposition remains, due largely to its tendency to re-release old games within new ones, as with Animal Crossing, Metroid Prime, and The Legend of Zelda Collector's Edition, as well as with the re-release of many older games for the Game Boy Advance Classic NES Series. The enhanced remake idea sometimes, but not always, curbs the need for emulation of NES quality games on the Nintendo GameCube. Recently Nintendo has announced that their upcoming Nintendo Revolution console will be backwards compatible, allowing users to play GameCube games by inserting the game discs. The system will also allow for the downloading of NES, SNES and N64 games onto the console over the Internet, with them being playable on the console which may actually be achieved through emulation. With this new feature, coined the "virtual console" by the company's president, Nintendo may be able to reduce the illegal ROM downloading and open up a new revenue stream, although success is still unknown. Another possibility is that while Nintendo's official policy is to oppose emulation, they actually encourage third party developers, emulation and distribution of old ROM images through lax enforcement. This may actually benefit Nintendo in the long term as revenue from older, less sophisticated games tends to be low but sales of newer products or remakes are increased by having a larger mindshare. It should be noted that there is a considerable amount of emulation software available for nearly every Nintendo system produced to date while Sony and Microsoft spend considerable amounts of effort trying to prevent such uses of their hardware and software. It should also be noted that sales figures and profitability of Nintendo is considerably higher.

It is notably quite easy to find sales figures for titles believed to be defunct, and in fact those retail streams can continue to generate money, though the release of old titles as pirated software generally kills those revenue streams immediately. Used software is a common counterpoint argument, claiming that the reflux of titles through retailers generates no new revenue for publishers, but studies show that these titles actually perform a role similar to franchise loss leaders, and that in fact used prequel software in circulation can dramatically boost sales rates.

Censorship

For many years, Nintendo of America had a policy of strict censorship for video games published on its systems. In 1994, when the ESRB video game ratings system was introduced, Nintendo chose to abolish most of these policies in favor of gamers making their own choices about the content of the games they played. When this policy was still in effect, religious symbols, appearance of excessive blood or gore, nudity, sexuality, or smoking was all removed from licensed games. This zero tolerance policy was praised and championed by U.S. Senator Joe Lieberman, but others criticized the policy, claiming that gamers should be allowed to choose the content they want to see. Today, changes to the content of games are done primarily by the game's developer. Nintendo has since allowed several mature-content games to be published on its systems, including (but not limited to): Perfect Dark, Duke Nukem 3D (as Duke Nukem 64) Conker's Bad Fur Day, BMX XXX, Resident Evil 4, True Crime: Streets of L.A., Eternal Darkness: Sanity's Requiem, and Geist, all prime examples of Nintendo lessening their practices. These games are all rated "M" (for mature), as are their counterparts for Sony's and Microsoft's systems. Interestingly enough, the Playstation 2 version of *BMX XXX* had censored breasts in it, while Nintendo left it alone.

One known side effect of this policy was the Sega Genesis version of Mortal Kombat selling over double the number of the Nintendo's Super NES version, mainly due to the fact that Nintendo had forced Acclaim to recolor the red blood to look like white sweat and replace some of the more gory attacks in their release of the game, unlike

Sega, which allowed the selling points of blood and gore to remain in the Genesis version (though the Genesis version of the game required a code to unlock the gore). Nintendo allowed the Super NES version Mortal Kombat II to ship uncensored the following year. Also, Square executives have suggested that the price of publishing games on the Nintendo 64 along with the degree of censorship and control Nintendo enforced over their games — most notably Final Fantasy VI — were factors in moving their games to Sony's PlayStation console.

Although Nintendo had begun lessening their censorship of console games with the 1994 introduction of the ESRB, portable games continued to be censored for some time. For example, Konami was forced to remove all references to cigarettes in the 2000 Game Boy Color game Metal Gear Solid. Another example is the Game Boy version of Mortal Kombat II, which contains no blood whatsoever, but still depicts fatalities with decapitation and other violent acts. (though it is unknown if this was at Nintendo's demand). However, Mature-rated Game Boy Advance games such as 2003's Max Payne and 2004's Grand Theft Auto Advance suggest that Nintendo is no longer interested in censoring the games that appear on its systems, console or portable.

In recent years, Nintendo has begun to create more mature games such as Geist. The original Super Smash Bros. on the Nintendo 64 was rated E by the ESRB, while its GameCube sequel, Super Smash Bros. Melee was rated T. The Metroid Prime games and the new Legend of Zelda: Twilight Princess have been notably more adult oriented.

Public relations

For years and to today, Nintendo has been regarded as a secretive company by the press. Rarely does Nintendo confirm or deny rumors. Nintendo is known as one of the top companies for customer service, however.

In this vein, Nintendo is known as the rulers of unveiling things at the Electronic Entertainment Expo (E3) in Los Angeles every year. The Nintendo DS was first revealed here, and many online sources rely on E3 to come around for Nintendo to launch news about new systems. However, at this year's Expo, Nintendo released very few technical details about their upcoming console, the Nintendo Revolution. The Nintendo Revolution controller, which had been shrouded in secrecy, was revealed on September 16, 2005 at the Tokyo Game Show (TGS).

Nintendo of America uses an outside firm, Golin Harris, to handle much of its public relations. Beth Llewelyn is the in-house senior director of public relations at Nintendo of America. Tom Harlin is Nintendo of America's manager of public relations. Nintendo of

Europe also uses an outside firm, Cake Media, to handle much of its public relations.

Community

From 1995 to 1997, Nintendo's American community was hosted by AOL and called the Loudhouse. In 1997, the company paid for a very small BBS and Message Center hosted on their own servers. Starting in 2001, the online community was effectively shut down until around 2002, at which point NSider chat was reopened to subscribers of Nintendo Power. In April of 2003, Nintendo bought a Lithium Technologies license and moved the community to the Hyrule Town Square on Lithium servers. In November 2003, the full Nintendo NSider Forums opened. Still hosted by Lithium, this update came with a new look, new ranks, and integration with My Nintendo.

People

Fusajiro Yamauchi — Founder of Nintendo in 1889. Died 1940.
Minoru Arakawa — Founder and former president of Nintendo of America.
Hiroshi Yamauchi — Former president of Nintendo (1949-2002).
Satoru Iwata — Current president of Nintendo (2002-present).
Shigeru Miyamoto — Nintendo's chief designer and video game producer. Largely known for creating many of Nintendo's most popular games including Mario, Donkey Kong, Pikmin, and the Legend of Zelda. In 1998 Miyamoto became the first person to be inducted into the Academy of Interactive Arts and Sciences' Hall of Fame.
Gunpei Yokoi — Best-known as the creator of the Game Boy and the Metroid series. Died 1997.
Satoshi Tajiri — Creator of the Pokémon series.
Koji Kondo — Composer of music tracks in many Nintendo games.
Yuka Tsujiyoko — Composer of music tracks in many Intelligent Systems games, most notably Paper Mario and the Fire Emblem series.
Howard Philips — Creator of Nintendo Power magazine.
Tatsumi Kimishima — Current president of Nintendo of America.
Perrin Kaplan — Nintendo of America's Vice President of Marketing and Corporate Affairs
Reggie Fils-Aime — Nintendo of America's current Executive Vice President of Sales and Marketing
Howard Lincoln — Now retired, former Chairman of Nintendo of America.

George Harrison — Senior Vice President of marketing and corporate communications.

Notable software and franchises

1080 Snowboarding - First appeared on the Nintendo 64
Animal Crossing
Balloon Fight
Battalion Wars
Battle Clash - A Super Nintendo Super Scope game
Clu Clu Land
Cubivore - Originally for the Nintendo 64 in Japan, it was ported to the Gamecube by Atlus and had a cameo appearance in Super Smash Bros. Melee
Custom Robo (Confined to Japan until 2004)
Dr. Mario - Puzzle game featuring red, blue, and yellow viruses and vitamins
Donkey Kong (Nintendo EAD Tokyo) - Dates back to its original line of arcade games. Introduced Mario, back then known as "Jumpman".
Doshin the Giant - Has yet to be released in America
EarthBound (called "Mother" in Japan)
Excitebike
Fire Emblem (Intelligent Systems) (Confined to Japan until 2003)
F-1 Race - Has nothing to do with F-Zero; has appeared on the NES and Game Boy
F-Zero (Nintendo EAD) - Has appeared on the SNES, N64, GBA, and GCN
Game & Watch - Nintendo's oldest franchise
Geist - Recent franchise bought by Nintendo from n-Space, Inc.; will possibly have sequels in the future
Golden Sun (Camelot) - RPG developed by a second party
Ice Climbers - An old franchise featuring Popo and Nana
Ken Griffey Jr. series of games - When he was still with the Mariners, Nintendo and Rare made games of him from the SNES up until the end of the N64
Kid Icarus (Intelligent Systems) - Only 2 games of Kid Icarus have been produced (NES, GB), though Miyamoto hinted that there will be a sequel on the Nintendo Revolution
Kirby (HAL Laboratory, Inc.)
The Legend of Zelda (Nintendo EAD) - One of the company's most popular franchises and widely considered to be among the best franchises ever. It has won numerous awards including several "Greatest Game of all Time" awards.

Mach Rider
Mario (Nintendo EAD) - Nintendo's flagship franchise and main influence in the platform genre. Mario has branched out to multiple spin-offs including Mario Party and Mario Tennis
Mario Kart - Ongoing series that has been on SNES, N64, GBA, GCN, and NDS
Metroid (Intelligent Systems / Retro Studios) - One of the company's most popular franchises
Mischief Makers - Made by Nintendo, Enix, and Treasure Co. Ltd for the Nintendo 64
Nintendogs - Puppy simulator franchise with several cameos of other Nintendo Franchises
Nintendo Wars (Intelligent Systems) (Confined to Japan until 2001; Advance Wars was not released in Japan due to 9/11 until Game Boy Wars Advance 1+2 was released there on November 25th, 2004)
Pikmin
Pilotwings - Has been on the Super Nintendo and Nintendo 64 and will be returning on the Revolution
Pokémon (Game Freak) - Arguably the most influential (certainly the most lucrative) of Nintendo's recent franchises
Punch-Out!!
Sim City - The SNES version is partially owned by Nintendo along with the character, Dr. Wright, who is based on Maxis' co-founder (Dr. Wright has appeared in the Game Boy Zelda games and was a trophy in SSBM)
Star Fox (Nintendo EAD) - Has appeared on the Super Nintendo, Nintendo 64 & Nintendo Gamecube
Super Smash Bros. (HAL Laboratory, Inc.) - A fighting game that pins Nintendo's franchises up against each other
Tetris Attack (Intelligent Systems) - The rights for Tetris has often been debated, as due to some complications multiple companies all own the rights to Tetris
Wario - Spin-off character started from Super Mario Land 2. Includes the Wario Land series of games, Wario's Woods, WarioWare, Inc. series, Wario Blast and Wario World
Wave Race - Has appeared on the original Game Boy, Nintendo 64, and Nintendo Gamecube

Divisions

First-party

Nintendo EAD Tokyo — Youngest group inside Nintendo;

responsible for Donkey Kong: Jungle Beat.

Nintendo Entertainment Analysis and Development (Originally "Nintendo Research & Development 4") — Largest division at Nintendo. Managed by Shigeru Miyamoto. Responsible for Mario, Zelda, and F-Zero franchises.

Nintendo Integrated Research & Development (Originally "Nintendo Research & Development 3") — Produced arcade games in the 1980s.

Nintendo Licensing Division — Produces (and licenses) first-party games by independent developers.

Nintendo Research & Development 1 — Oldest team inside Nintendo.

Nintendo Research & Development 2 — "Experimental" group, responsible Kirby Tilt 'n' Tumble.

Nintendo Research & Engineering — Hardware oriented.

Nintendo Software Planning Division — Specializing in communicating with overseas developers.

Nintendo Software Technology Corporation — First inhouse development studio of Nintendo of America.

Nintendo Special Planning & Development — Recently formed development group focusing on Pokémon Mini, the e-Reader, and the Game Boy Advance.

HAL Laboratory — Responsible for the Kirby franchise, Super Smash Bros. Melee, and the development of the e-Reader.

Intelligent Systems (Formerly Nintendo Research & Development 1) — Established in 1986 by members of Nintendo Research & Development 1 to develop games. Responsible for Metroid, Fire Emblem, and Nintendo Wars franchises.

Retro Studios — Former second-party, now wholly-owned by Nintendo; responsible for the Metroid Prime series.

Game Freak — developer of the Pokémon video game series.

Second-party

These second-party game companies have contracts with Nintendo to only make games for Nintendo and not its competitors. Nintendo may also own majority stock in these companies:

Brownie Brown — Software developer consisting of former members of Squaresoft.

Creatures, Inc. (formerly known as Ape, Inc.) - Collaborated with Game Freak and Nintendo to make the Pokémon series. Also made the Game Boy Camera.

Genius Sonority — Newly formed developer; responsible for Pokémon Colosseum and its sequel, Pokémon XD.

iQue — Responsible for Nintendo products in China, partially owned by Nintendo Responsible for iQuest Dual Screen Tutor.

Camelot Software Planning — Responsible for Golden Sun, Mario Tennis, and Mario Golf series of games.
AlphaDream — Responsible for Tomato Adventure and Mario & Luigi: Superstar Saga.
Fuse Games — A British Pinball game company who made Mario Pinball Land and Metroid Prime Pinball.

Rare used to be half-owned by Nintendo, and was an exclusive second-party. However, Nintendo felt Rare's influence was lagging, so it put the company up for bids and sold off all of its shares to Microsoft in 2002.

Devoted third-party companies

Nintendo has close ties with or owns stock in these companies and has them make games with their franchises:

Hudson Soft — Now belong to Konami; its first collaborated game with Nintendo was Wario Blast, which featured Bomberman.
Konami — Konami has made games based on Nintendo's franchises such as DDR Mario Mix.
Namco — Nintendo and Namco have collaborated on several games such as Pac-Man Vs. (by Miyamoto) and Mario Superstar Baseball; belongs to the Triforce arcade system.
Capcom — Nintendo and Sega partially own a secondary developer to Capcom called Flagship (company); they helped to make the GBC and GBA Zelda games.
Rare — Although at one time under a 49% ownership with Nintendo, Rare is now owned by Microsoft. It is responsible for such titles as Donkey Kong Country/Land/64, Goldeneye 007, Banjo-Kazooie, Battletoads, and Killer Instinct. It has currently released Perfect Dark Zero and Kameo: Elements of Power for the Xbox 360. The company has developed 5 titles for the Game Boy Advance while under Microsoft's roof.
Sega — Nintendo's former rival in the console market. Sega made F-Zero GX/AX and also belongs to the Triforce arcade system.
Panasonic — Not a game company, it does however help Nintendo with technology and also made the Q multimedia console.
Square Enix — Nintendo has published Square-Enix's Final Fantasy games on the Game Boy Advance and Gamecube. These games could also be registered on Nintendo's website (through a My Nintendo account).
Atlus — Ported Cubivore to the Gamecube from the Nintendo 64 and supported the Virtual Boy.
Treasure Co. Ltd — It was formed by ex-Konami workers who promised they would never produce sequels of their franchises (but

made a sequel to Gunstar Heroes). The company helped make Wario World and Japanese-only games; very close with Nintendo and Sega.
Bandai — Recently merged with Namco, Nintendo owns stock in both companies and rumors have stated that Bandai could have been wholly owned by Nintendo.
Midway Games — For the arcades, Midway has helped Nintendo with Killer Instinct and the Cruis'n games.

Arcade games released by Nintendo

Cruis'n USA
Cruis'n World
Cruis'n Exotica
Donkey Kong
Donkey Kong Jr.
Donkey Kong 3
Duck Hunt
Excitebike
F-Zero AX
F-1 Race
Hogan's Alley
Ice Climber
Killer Instinct
Mach Rider
Mario Bros.
Mario Kart Arcade GP
The Nintendo Super System
The Nintendo Vs. Series
The Play Choice 10 series
Popeye
Punch-Out!!
Radar Scope
Sheriff
Super Mario Bros.
Super Punch-Out!!
Urban Champion
Wild Gunman

Anime

On November 2004, Hiroshi Yamauchi announced that Nintendo would start making anime. Its first project is an adaption of the

Hyakunin Isshu poem anthology.

Nintendo offices and locations

Nintendo Co., Ltd (NCL), the main branch of the company, is based in Kyoto, Kyoto Prefecture, Japan. Nintendo of America (NOA), its American division, is based in Redmond, Washington with distribution centers in Atlanta, Georgia, and North Bend, Washington. Nintendo of Canada, Ltd. (NOCL) is a based in Richmond, British Columbia, with its own distribution centre in Toronto, Ontario. Nintendo of Australia, its Australian division, is based in Scoresby, Melbourne, Victoria, and Nintendo Europe, the European division, is based in Großostheim, Germany. Nintendo has also founded iQue, Ltd. in Suzhou, China, a company that sells Nintendo products only in mainland China.

Unauthorized Brand Use in the Philippines

In the Philippines, an electronics retailing chain operates under Nintendo's name, apparently illegal in nature since the Nintendo brand is trademarked by the video game giant. In addition, the retailer also uses Nintendo's logo clearly displayed on its stores. The illegal Philippine "Nintendo" sells many kinds of electronics as well as video games, including Sony PlayStation and Microsoft Xbox hardware and software. Most of the games it sells to the public are pirated.

Apparently Nintendo of Japan never took legal action against the Philippine Nintendo retailer, which currently has two branches in Metro Manila. One in the city of Manila and another at the Festival Super Mall in Filinvest, Alabang, Muntinlupa City.

Many illegal/pirated gameboy advance games were also sold through mall giants such as SM.

See also

- History of computer and video games

Home | Up | Nintendo GameCube | Nintendo DS | Nintendo Revolution

Nintendo GameCube

Nintendo GameCube

Manufacturer

Nintendo

Type

Video game console

Generation

Sixth generation era

First available

September 14, 2001

Media

1.5GB Mini-DVD

Top-selling game

Super Smash Bros. Melee

The **Nintendo GameCube** (Japanese: ²üàåüÖ; originally code-named "Dolphin" during development; abbreviated as **GCN**) is Nintendo's fourth home video game console, belonging to the Sixth generation era; the same generation as Sega's Dreamcast, Sony's PlayStation 2, and Microsoft's Xbox. The GameCube itself is the most compact and inexpensive of the sixth generation era consoles. The GameCube was released on:

September 14, 2001 (Japan)
November 18, 2001 (North America)
May 3, 2002 (Europe)
May 17, 2002 (Australia)

The GameCube was first introduced in volume #145 of Nintendo Power magazine. Luigi's Mansion was the first cover game (volume #150).

Launch titles

The GameCube launched in North America with the following twelve games:

Title	Developer	Publisher(s)
All-Star Baseball 2002	Acclaim	Acclaim
Batman Vengeance	Ubisoft	Ubisoft
Crazy Taxi	Hitmaker	Sega Acclaim
Dave Mirra Freestyle BMX 2	Z-Axis	Acclaim
Disney's Tarzan Untamed	Ubisoft	Ubisoft
Luigi's Mansion	Nintendo	Nintendo
Madden NFL 2002	Tiburon	EA Sports
NHL Hitz 20-02	EA Black Box	Midway
Star Wars: Rogue Squadron II: Rogue Leader	Factor 5	LucasArts
Super Monkey Ball	Amusement Vision	Sega
Tony Hawk's Pro Skater 3	Neversoft	Activision
Wave Race: Blue Storm	NST	Nintendo

Overview

Unveiled during Spaceworld 2000, the Nintendo GameCube was widely anticipated by many who were shocked by Nintendo's decision to design the Nintendo 64 as a cartridge-based system. Physically shaped similar to a geometric cube, the outside casing of the Nintendo GameCube comes in a variety of colors, such as indigo, platinum, and black (also a limited edition Resident Evil 4 platinum and black game console). In Japan, the system is also available in orange, or in limited edition colors like Crystal White, Mint Green, Copper, and White with black pinstripes.

The Nintendo GameCube uses a unique storage medium, the GameCube Optical Disc, a proprietary format based on Matsushita's optical-disc technology; the discs are approximately 8 centimeters (3 1/8 inches) in diameter (considerably smaller than a standard CD or DVD), and the discs have a capacity of approximately 1.5 gigabytes. The disc is also read backwards, opposite to that of a standard DVD. This move was mainly intended to prevent piracy of GCN titles, but like most anti-piracy technology, it was eventually defeated by exploiting a flaw in Phantasy Star Online Episode I & II. [1]

The Nintendo GameCube does not have any DVD-movie support. Common reasons cited by Nintendo for using this format are to lower piracy, provide faster loading times, and to make the system cheaper (to avoid DVD-licensing fees) and more compact. The lack of DVD movie support was also a double-edged sword; it did not appeal to the mass audience that turned to the PlayStation 2 and Xbox due to their built-in DVD support. Despite the protection of a non-standard disc format (essentially a miniature DVD-ROM with non-standard sectors and filesystem formatting), a number of modchips such as the Qoob and ViperGC have been released that, when used in conjunction with a modified bios, allow the use of a standard or 8 cm DVD-ROM to load backed-up, homebrew, boot-leg or pirate software. There was also a DVD-capable variant released by Panasonic in Japan, under license from Nintendo. Called the *Q*, it was a modified GameCube that could also hold standard-sized DVD discs and play back both formats. However, it was never released in North America and production ceased in December 2003. The Q's different footprint also left it incompatible with the Game Boy Player.

The GameCube system also has the unique capability to connect to Nintendo's portable system Game Boy Advance or its SP variant. Such a connection between the two systems allows the transfer of game data. Examples of this functionality include the use of the Game Boy Advance as a controller for the game played. Subsequent information related to game play may be displayed on the Game Boy Advance's color screen for added convenience or to avoid the cluttering of the display on the television screen. This functionality has also been used to unlock "secrets" such as new levels or characters when two games, a Game Boy Advance game and its GameCube equivalent, are connected together. Up to four Game Boy Advance systems can be connected to the GameCube through the GameCube's four controller ports for multiplayer play. A special Nintendo GameCube to Game Boy Advance connection cable is required for each Game Boy Advance system that is to be connected to the GameCube. A fair variety of GameCube games implement this innovative functionality, while Nintendo encourages its continued use.

The GameCube was designed for ease of portability, with its small size complemented by a carrying handle (critized by Offical Xbox Magazine calling it a "Barney Purse Handle). However, this feature over other consoles was minimal since its inexpensive production and selling price were its main advantages. Interestingly, with the addition of the Game Boy Player accessory, the GameCube becomes a nearly perfect geometric cube. Despite being more compact than the

PlayStation 2 (being that it was released over a year after and kept the power supply separate from the console), the GameCube has superior graphics processing power and better ProLogic sound, but no optical output.

The controller has the traditional directional pad, two thumbsticks, and eight buttons: A, B, X, Y, Z, L, R, and start/pause. Keeping up with the Nintendo 64, it features no select button, but the C buttons have been replaced by an analog C stick, instead. The thumbsticks do not have added "clickable" button functionality—unlike other such consoles of the era—but both L and R shoulder buttons are analog, being able to detect pressure applied to them before "clicking," essentially doubling their functionality.

The GameCube also had a network adapter released during the holiday season of 2002, but Nintendo did not promote or support online gaming anywhere as heavily as Sony or Microsoft. The only high profile title that required the adapter was Sega's *Phantasy Star Online Episode I & II*. Instead, Nintendo focused more on Game Boy connectivity. Two separate adaptors were made, one for dial-up phone lines and one for broadband connections.

Software library

The GameCube currently has over **550** games available in its library. In addition, over **100** titles are currently in development.

The GameCube features games with the following ratings:

- Early Childhood: **1**
- Everyone: **287**
- Everyone (E10+): **18**
- Teen: **204**
- Mature: **45**
- Adults Only: **0**

Source: ESRB

Key first-party titles

The Nintendo GameCube software library contains such traditional Nintendo series as *Super Mario*, *The Legend of Zelda*, and *Metroid*. Some of the more popular first-party titles include:

Animal Crossing
Donkey Kong Jungle Beat
Metroid Prime
Metroid Prime 2: Echoes
Super Mario Sunshine
Super Smash Bros. Melee

F-Zero GX
Geist
Luigi's Mansion
Mario Kart: Double Dash!!
Mario Party series
Paper Mario: The Thousand-Year Door
Pikmin
Pikmin 2
Pokémon Colosseum
Pokémon XD: Gale of Darkness
The Legend of Zelda: Four Swords Adventures
The Legend of Zelda: Ocarina of Time Master Quest
The Legend of Zelda: The Wind Waker
The Legend of Zelda: Twilight Princess (Projected release: April 2006)
Wave Race: Blue Storm

One of the defining aspects of the Nintendo GameCube is the rejuvenated relationship between Nintendo and its licensees. Unlike previous generations in which Nintendo was seen by some as bullying its third-party game developers, Nintendo openly sought game-development aid on the Nintendo GameCube. Sometimes, Nintendo would merely request that a third-party developer produce a game based on the third-party's own game franchises; other times, Nintendo would request that the third-party developer produce a game based on Nintendo's own game franchises. Nintendo often took an active role in cooperating with a developer. This policy from Nintendo resulted in many exclusive third-party games for the Nintendo GameCube, and the arrival of multiformat titles on the platform. Because of these efforts, GameCube owners tend to support first-party games more heavily than third party games, whereas the reverse is true for PlayStation 2 and Xbox owners.

Market share

Despite Nintendo's efforts, the GameCube was unsuccessful in recapturing the preceding Nintendo 64's market share, and the sixth generation was taken over by the PlayStation 2. Nintendo's family-friendly franchises such as *Pokémon* gave the GameCube the reputation of being a "kiddie" console that failed to appeal to the "mainstream" market[2]. Many third-party games popular with teenagers or adults such as first-person shooters and the controversial *Grand Theft Auto* series skipped a GameCube port in favour of the PlayStation 2 and Xbox.

Also, due to Nintendo's lack of support for the online capabilities of the GameCube, as opposed to Microsoft and later Sony who actively promoted online gaming by releasing first-party online titles and soliciting developers, many multiplatform games with online functionality were released offline-only on the GameCube. Although online support was added in late 2002 and both Sony and Nintendo followed a similar decentralized online model (in contrast to the centralized Xbox Live), lower sales of the GameCube versions of games during its launch year precluded developers from including online support. The 1.5 gigabyte proprietary disc format may have also been a limiting factor since Nintendo's rivals used the 4.7 gigabyte DVD. However, the Nintendo disc still had sufficient room for most games, although it had less extras than other versions (for example, the *Spider-Man* Xbox release featured extra levels not in the Gamecube port).

The strong preference of GameCube owners for first-party titles has also put the system at odds with major third party developers. Cross-platform games—such as sports franchises released by Electronic Arts—sold far below their PlayStation 2 and Xbox counterparts, prompting developers to scale back or completely cease support for the GameCube. After several years of losing money from developing for Nintendo's system, Eidos Interactive announced that it would end support for the GameCube, cancelling several titles that had been in development including *Hitman 2* [3]. Since then, however, Eidos has resumed development [4] of GameCube titles. Also 2K Sports, who have not supported the Gamecube, will release *Major League Baseball 2K6* in spring 2006 [5]. During the second half of 2003, due to sagging sales, Nintendo had to cut GameCube production in order to sell off surpluses and issue a profit warning [6]. Since then, sales have rebounded due to a price drop to $99 USD and the release of the *The Legend of Zelda: Collector's Edition* bundle, which spurred sales. GameCube sales have continued to be steady, particularly in Japan, but the Gamecube is still in third place in worldwide sales [7].

The GameCube has not performed to expectations due to being unable to match the sales and market share of its Nintendo 64 predecessor. However, this has been offset by the growing size of the video game console market which has allowed Nintendo to carve out a loyal following even though its market share decreased. The GameCube had a strong hold on the children's market and its low price compared to the PS2 and Xbox kept it competitive. Nintendo also reassured nervous investors by stating that they would "only exit the software business at the same time they would exit the hardware business"; in other words, that they would not discontinue their console business to focus on developing games like Sega had done after the failure of the Dreamcast. Unlike Sega, Nintendo has strong cash reserves so it could afford to match price wars whenever Sony or Microsoft lowered the price of their console. Also before the price wars, it was estimated that Nintendo lost the least amount of money or even made a small profit on each sale of a GameCube, compared to its rivals who sold their consoles at a loss[8].

Major second and third-party titles

EA Sports games (Electronic Arts)
Eternal Darkness: Sanity's Requiem (Silicon Knights)
F-Zero GX (from Sega, based on Nintendo's own game properties)
Final Fantasy: Crystal Chronicles (Square Enix)
Metal Gear Solid: The Twin Snakes, a collaborative enhanced remake between Konami and then-second-party to Nintendo, Silicon Knights
Resident Evil series (Capcom)
Resident Evil Zero
Resident Evil (enhanced remake)
Resident Evil 4
Soul Calibur 2 (Namco)
Sonic the Hedgehog series (Sega and Sonic Team)
Sonic Adventure 2 Battle (Sega and Sonic Team)
Sonic Mega Collection (Sega) and (Sonic Team)
Star Wars: Rogue Squadron series (Factor 5)
Star Fox series (from Namco, based on Nintendo's own game properties)
Super Monkey Ball series (Sega)
Tales of Symphonia (Namco)
Viewtiful Joe series (Capcom)
Wario World (from Treasure Co. Ltd, based on Nintendo's own game properties)

Hardware specifications

The following are hardware specifications provided by Nintendo of America. Some benchmarks provided by third-party testing facilities do indicate, however, that some of these specifications, especially those relating to performance, may be conservative.

Central processing unit

- Name: "Gekko"
- Producer: IBM
- Core Base: PowerPC 750CXe, 43-mm^2 die (modified PowerPC 750 RISC with 50 new instructions)
- Manufacturing Process: 0.18 micrometre IBM copper-wire

technology
- Clock Frequency: 485 MHz
- CPU Capacity: 1125 Dmips (Dhrystone 2.1)
- Internal Data Precision:
  - 32-bit Integer
  - 64-bit Floating-point, usable as 2x32-bit SIMD
- External Bus:
  - 1.3 gigabyte/second peak bandwidth
  - 32-bit address space
  - 64-bit data bus; 162 MHz clock
- Internal Cache:
  - L1: instruction 32KB, data 32KB (8 way)
  - L2: 256KB (2 way)

Graphics processing unit

- Name: "Flipper"
- Producer: ArtX/Nintendo (ArtX was acquired by ATi Technologies in 2000 and is now a part of ATi)
- Manufacturing Process: 0.18 micrometre NEC embedded DRAM process
- Clock Frequency: 162 MHz
- Embedded Frame Buffer:
  - Approximately 2 megabytes in capacity
  - Sustainable latency of 6.2 nanoseconds
  - RAM type is 1T-SRAM
- Embedded Texture Cache:
  - Approximately 1 megabyte in capacity
  - Sustainable latency of 6.2 nanoseconds
  - RAM type is 1T-SRAM
- Texture Read Bandwidth: 10.4 gigabytes/second (at peak)
- Main Memory Bandwidth: 2.6 gigabytes/second (at peak)
- Fill Rate: 648 megapixels/second
- Pixel Depth:
  - 24-bit RGB / RGBA
  - 24-bit Z-buffer
- Image Processing Functions:
  - Fog
  - Subpixel anti-aliasing
  - 8 hardware lights
  - 8 pixels pipeline
  - hardware nurbs
  - Alpha blending
  - Virtual texture design

    - Multi-texturing, bump mapping
    - Environment mapping
    - MIP mapping
    - Bilinear filtering
    - Trilinear filtering
    - Anisotropic filtering
    - Real-time hardware texture decompression (S3TC)
    - Real-time decompression of display list
    - Hardware 3-line deflickering filter

Audio specifications

- Producer: Macronix
- Clock Frequency: 81 MHz
- Instruction Memory:
    - 8 kilobytes of RAM
    - 8 kilobytes of ROM
- Data Memory:
    - 8 kilobytes of RAM
    - 4 kilobytes of ROM
- Simultaneous Channels: 64 channels
- Encoding: ADPCM
- Sampling Frequency: 48 kHz
- 206mb graphics
- "Dolby Pro Logic II" in analog audio out
- AC3 signal through "digital out" with D-erminal cable

Other system specifications

- System Floating-point Arithmetic Capability: 10.5 GFLOPS (at peak) (MPU, Geometry Engine, HW Lighting Total)
- Real-world Polygon Performance: 6 million to 12 million polygons/second (at peak) (assuming actual game conditions with complex models, fully textured, fully lit, etc.)*
- Main RAM:
    - Approximately 24 megabytes in capacity
    - Sustainable latency of 10 nanoseconds
    - RAM type is 1T-SRAM

(Even though DDR-SDRAM is significantly faster, since the PowerPC 750CXe can not address DDR-SDRAM, it is not used.)

- Auxiliary RAM:
    - Approximately 16 megabytes in capacity

    - 81 MHz in speed
    - RAM type is DRAM
- Disc Drive:
    - Drive type is Constant Angular Velocity (CAV)
    - Average access time is 128 milliseconds
    - Data transfer speed is between 2 megabytes per second and 3.125 megabytes per second
- Disc Media:
    - Based on DVD technology
    - Diameter is 3 inches in length
    - Producer is Matsushita (Also known as Panasonic)
    - Approximately 1.5 gigabytes in capacity
- Controller Ports: 4
- Memory Card Slots: 2
- Analog Audio/Video Outputs: 1
- Digital Video Outputs: 1 *
- High-speed Serial Ports: 2
- High-speed Parallel Ports: 1
- Power Supply: AC Adapter DC12 volts x 3.25 amperes
- Physical Measurements of Entire System: 110 mm (H) x 150 mm (W) x 161 mm (D). [4.3"(H) x 5.9"(W) x 6.3"(D)]

  * The Digital output was removed in a hardware revision in May 2004. Models without the port are DOL-101. [9] The original system with the port is model DOL-001.

Media

The **GameCube Optical Disc** is the media format used by the Nintendo GameCube. The disc is a proprietary version of the eight cm DVD (MiniDVD) format. The capacity of the disc is 1.5 GB. Games with large amounts of voice acting or pre-rendered video often need to be put on two discs.

Controller

The standard **GameCube Controller** totals eight buttons, two analog sticks and a D-pad. The primary analog stick is on the left, with the D-pad below it. On the right are four buttons; a large green "A" button in the centre, a smaller red "B" button to the left, an "X" button to the right and a "Y" button to the top. Below those, there is a yellow "C" stick, which has a similar function to the right stick on a PlayStation. The start/pause button is in the middle of the controller.

On the top of the controller there are two analog shoulder buttons marked "L" and "R" which are moulded to fit index fingers. Slightly above the "R" button is the "Z" button. In a late design change, the "Z" button was oddly positioned above the "R" trigger. Originally, Nintendo was not going to include it, but game developers asked for it to be put in. Some unofficial controllers also have "turbo" or "macro" buttons, but these only modify the actions performed by other buttons.

The controller is a standard wing grip design, and was designed to fit well in human hands. The L and R analog shoulder buttons, the main innovation, have when fully depressed an additional 'click' if the buttons are depressed further. This serves as two additional buttons on the controller without the need to actually add physical buttons. Various games use this structure to varying levels of success.

One notable feature of the GameCube is that when turned on, like the Nintendo 64 controller, it will set the current analog stick and L and R buttons' positions as "neutral", which may cause undesired effects in games if they are aligned incorrectly at startup. Thus, Nintendo established a way to reset the controller. They advise players to hold down X, Y and start/pause for three seconds, and the controller should work fine again. This method is also commonly used as a prank during multiplayer games, in which players can set the neutral positions of the other players' controller buttons to non-neutral positions, causing malfunction during gameplay. In the case of the wireless Wavebird controller, turning the device off and back on while both sticks are in neutral position also acts as a remedy.

Accessories/peripherals

Controller (Standard colours include Indigo, Black, Spice (Orange), Platinum and Indigo-clear. There are also many limited edition controllers available such as a split Platinum and Red, with the Mario "M" logo replacing the regular GameCube logo seen on standard controllers. There are also specially shaped controllers, such as a blood-spattered chainsaw released to coincide with Resident Evil 4.)
Wavebird (RF wireless controller)
Memory Card (59, 251 or 1019 blocks. A maximum of 127 files can be stored on a memory card)
Nintendo GameCube Game Boy Advance cable (for games that support connectivity between the GameCube and the Game Boy Advance)
Modem or Broadband adapter (for internet or LAN play)
Game Boy Player (to play Game Boy games on the television, using either a GameCube controller or a connected Game Boy Advance)

Component video cable (for progressive scan (480p and 720p) support) which requires a GameCube with Digital Video Output. Less than one percent of GameCube owners used 480p, therefore the digital output was eventually removed from the design to reduce the system's manufacturing costs. See System Specifications above and Official Information.)

VGA Adapter. Allows GameCube play on a standard computer monitor. Several are available from Lik-Sang, however, a game supporting 480p combined with the Component Video cable above, and the VD-Z3 (which has a monitor pass-through) or this can give Progressive Scan display quality on a computer monitor.

In PAL regions, an RF cable for connection to older televisions, and an RGB SCART cable for high-quality connections

DK Bongos for use with the music games Donkey Konga, Donkey Konga 2 and Donkey Konga 3, and the Donkey Kong platform title Donkey Kong Jungle Beat. Odama was originally announced to use the bongos, but this has been changed in the most recent version, which is likely the final version.

Microphone, which plugs into memory card slot, for use with Mario Party 6 and Mario Party 7. Odama uses an alternate version, which clips onto the Gamecube controller.

SD Card Adapter, for games exhibiting the SD Card logo like Animal Forest e+. This official Nintendo accessory is currently sold in Japan only.

A dance pad, included with Dance Dance Revolution: Mario Mix

Marketing

Nintendo has used several advertising strategies and techniques for the GameCube. The earliest commercials displayed a rotating cube video, which would quickly morph into the GameCube logo. A voice whispered "GameCube". This was usually after the normal commercial for a GameCube game. Later on, Nintendo incorporated a video clip before the normal clip for the GameCube game would begin, similar to the brief PlayStation 2 logo before a commercial featuring the game. It basically rotated around what appeared to be the top of a GameCube console, with the lettering being slightly 3D. The lettering would begin as a wave, only to settle on the top of the pictured console.

Subsequent ad campaigns had Nintendo advertising with a "Who Are You" tangent, essentially marketing the wide range of games Nintendo offers. The idea behind the "Who Are You?" campaign is that "you are what you play"; the kind of game a gamer enjoys playing suggests a dominant trait in that gamer's personality. The "Who Are

You" logo is similar to graffiti lettering. Most of the "Who Are You?" commercials advertised games developed or published by Nintendo, but some developers pay Nintendo to promote their games, using Nintendo's marketing and advertising resources. One example is the advertisement campaign for Square Enix's GameCube-exclusive Final Fantasy game, Final Fantasy: Crystal Chronicles.

Sales

Nintendo reported that as of September 2005 they have sold a total of 19.31 million Nintendo Gamecube units worldwide. [10]

The GameCube currently sells at USD $99. Several bundles are out which include games such as *Pokemon XD: Gale of Darkness*, *Mario Party 7* and *Super Smash Bros. Melee* for America. There is a *Mario Smash Football* bundle for Europe and *Super Mario Strikers* bundle for Canada.

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Nintendo DS

Nintendo DS

Manufacturer

Nintendo

Type

Handheld game console

Generation

Seventh generation era

First available

November 21, 2004

Media

GBA cartridges

DS cards

Online service

Nintendo Wi-Fi Connection

Units sold

13 million (2006)

Top-selling game

Nintendogs (all versions)

The **Nintendo DS**, (sometimes abbreviated **NDS** or just **DS**), is a dual-screen portable handheld game console developed and manufactured by Nintendo. The name "DS" is short for both ***Dual Screen*** and ***Developer's System***, the latter of which refers to the features of the handheld designed to encourage innovative gameplay ideas among developers. Its code name was "Project Nitro". The DS has a horizontal clamshell design, similar to some Game & Watch video games, and the Game Boy Advance SP.

The DS is unique in that it has two screens (almost all game consoles use one screen), the lower of which is a touch screen. Additionally, it features a built-in microphone, and wireless connectivity with other DS users. Nintendo hopes that the new features present in the machine will provoke unique game development, attract developers, and appeal to both older gamers and non-gamers alienated by normal input methods.

As such, Nintendo has placed the DS outside of its highly successful Game Boy line, which is targeted at the pre-existing gaming market. Some have suggested that this was a precautionary measure to ensure the Game Boy name remained untarnished if the DS were to fail commercially, but given the sales of the handheld to date, the issue is rather academic.

Nintendo announced on December 26, 2005 that in Japan the Nintendo DS reached 5 million units sold in less than 13 months after its launch which marks the fastest-ever pace for a video game system in Japan. Nintendo of America announced on January 3, 2006 the

Nintendo DS has sold 4 million units and with news on January 5, 2006 the DS has sold over 3.5 million units in the European market. This brings the total worldwide sales of the Nintendo DS to near 13 million units in little over one year on the market. http://www.msnbc.msn.com/id/10698034/

On January 5, 2006, Nintendo issued a formal apology after the Nintendo DS had been sold out throughout Japan. No Nintendo system has ever sold out in Japan before.

Functionality

The Nintendo DS's primary function is as a video game console; no multimedia support is included, although Play-Yan, a special Game Boy Advance cartridge that can read an SD memory card and play movies and music, is available in Japan (see Accessories). The system is hoped to provoke more original development of titles in an industry that Nintendo perceives as being stagnant. Nintendo believes that the unit's unusual dual screen format will inspire creative game design by developers, both its own and third parties'.

While the most obvious unique selling point is the dual screens, the system also includes a microphone and touch screen functionality on the lower screen. To date, many games have used the touchscreen to emulate an analogue joystick or mouse. The DS also supports wireless connectivity, using 802.11b standards [3] to allow players to interact with other DS owners within short range (30–100 feet), or over the Nintendo Wi-Fi Connection service by connecting to Wi-Fi hotspots.

Design and specifications

Technology

The handheld unit has a mass of approximately 275 grams (9.7 ounces). The physical size is 148.7 × 84.7 × 28.9 mm (5.85 × 3.33 × 1.13 inches). It features two separate 3-inch (76 mm) TFT LCD screens, each with a resolution of 256 × 192 and a dot pitch of 0.24 mm. The lowermost display of the DS is overlaid with a touch screen, utilizing a stylus, the user's fingers, or an included wrist strap with a thumb cover for use in place of a stylus. The console uses two separate ARM processors, an ARM9 main CPU and ARM7 coprocessor at clock speeds of 67 MHz and 33 MHz respectively, with 4 MB of main memory. The system's 3D engine is theoretically capable of drawing

120,000 polygons per second, with a fill-rate of 30 million pixels per second.

Games utilize a proprietary solid state flash card format resembling the memory cards used in other portable electronic devices such as digital cameras; this semiconductor technology is said to be far cheaper than conventional cartridges and can be used within a system without moving parts to jar out of place when dropped. It is currently capable of supporting cards of up to 1 gigabit (128 megabytes) in size. These cards weigh around 3.5 grams (1/8 ounces). The unit features wireless networking capabilities for multiplayer games or chat using Wi-Fi. The current software that uses IP is limited, however, *Mario Kart DS*, *Tony Hawk's American Sk8land*, *Animal Crossing: Wild World*, and the yet to be released *Metroid Prime Hunters* and *Tetris DS* (both March 20, 2006) take full advantage of the Internet capability to find local as well as worldwide players to play with.

Inputs and outputs

The DS is the first portable console from Nintendo to incorporate stereo speakers. In addition to the touch screen, the DS has, to the left of the lower display, a traditional four-way control pad (with a narrow Power button above it some new users might hit by accident), while to the right are four action buttons (with narrow Select and Start buttons above) A B Y X, following in the footsteps of the SNES controller while hearkening back to the N64 "three-part" digital, analog, and button scheme. On the back, there are the L (Left) and R (Right) buttons, also following the style of the SNES controller.

Perhaps the most innovative use of the touch screen is for the emulation of other controls. For example, with use of the aforementioned "thumb stylus", it can emulate an analog joystick, or with the conventional stylus, its behavior can replicate a computer mouse.

The system also includes a built-in microphone. The first DS game to use this feature was Feel the Magic: XY/XX, in which several minigames require the player to blow or shout into the microphone. Nintendo's pet simulation game Nintendogs uses the microphone and speech recognition to command and train a virtual dog to perform tricks or other actions. Nintendo has also suggested it could be used for communication over a wireless network. At E3 2005, Nintendo showed a demo of a Nintendo DS being used as a wireless VoIP Phone.

Firmware

Nintendo's own custom firmware boots the system: from here, the user chooses to run a DS or Game Boy Advance game, use PictoChat, or search for downloadable games. The latter is an adaptation of the Game Boy Advance's popular "single cartridge multiplayer" feature, adapted to support the system's Wi-Fi link capabilities: players without the game search for content, while players with the game broadcast it. In November 2004, Nintendo announced its entry into the feature animation business, suggesting that theatres showing these features could install kiosks to broadcast game content to Nintendo DS units via this same feature. In March 2005, Nintendo tested broadcast kiosks in Japan, allowing players to download a demo of Meteos, extra content in Nintendogs, or extra songs for Jam with the Band. A similar download kiosk was at Nintendo's booth at E3 2005, and had downloadable demos and trailers.

The PictoChat program, which is permanently stored on the unit, allows users to communicate with other DS users over the wireless network by text, handwriting, or drawings, using the DS's touch screen and stylus for input; an on-screen keyboard partially covers the touch-sensitive area while using this mode, allowing for typed and written messages.

The DS's main menu also features an alarm clock and the ability to set preferences for boot priority (booting to games when inserted, or always booting to the main menu), GBA game screen usage (top or bottom), and user information (name, date of birth, favorite color, time, etc.).

There is currently an ongoing project aiming to bring the Linux operating system to the DS. As of June 2005, this project has successfully executed a 2.6 kernel, sash shell, some text games, and added touchscreen support.

Compatibility

The DS is compatible with Game Boy Advance (GBA) cartridges; the smaller DS cartridges fit into Slot 1 on the top of the system, while GBA games fit into Slot 2 on the bottom of the system. The DS is not compatible with games for the Game Boy Color and the original Game Boy, due to a slightly different form factor and the absence of the Z80-like processor used in these systems. This may be an attempt to separate the DS and Nintendo's established Game Boy line of handheld consoles; the GBA, for example, has the Z80 so it can run legacy Game Boy games. It may also be to keep the DS's price down, since including another chipset would likely have significantly added to the cost of producing the unit. In light of this incompatibility, several projects have started to emulate this platform. One such product is the freely available Goomba emulator[5].

The handheld does not have a port for the GBA Link Cable, so multiplayer or GameCube-Game Boy Advance link-up modes are not available in GBA titles. Similar connectivity, using the DS's wireless capabilities, will, however, reportedly be possible between the DS and Nintendo's successor to the GameCube, the Nintendo Revolution.

The DS only uses one screen when playing GBA games. The user can configure the system to use either the top or bottom screen by default. The games are displayed within a black border on the screen, due to the slightly different screen resolution between the two systems (256 × 192px DS, 240 × 160px GBA).

DS games inserted into Slot 1 are able to detect the presence of a specific GBA game in Slot 2. In games such as Castlevania: Dawn of Sorrow, Kirby: Canvas Curse, WarioWare: Touched!, Feel the Magic: XY/XX, and Advance Wars: Dual Strike, extra content can be unlocked by starting the DS game with the appropriate GBA game of the same series inserted. Also, some games take advantage of Slot 2 as a way to add extra game features, the first of these being an expansion pack for the music game, Daigasso! Band Brothers (announced as Jam with the Band in North America), which adds 31 new tracks to its song list. The first use of this feature in Western countries is a Rumble Pak included with Metroid Prime Pinball, which is also compatible with future DS games.

Interference

The Nintendo DS system has been the focal point of some controversy due to its ability to interfere with television signals. Many people find it easy to view their DS's activity on the television screen, while others find it difficult to locate the correct channel and tune the signal in. This is possible due to the frequency of the DS, which is on a very close wavelength to other consumer products. Other people find that the DS interferes with cellular telephones, microwaves, and computers (when the DS is in Wi-Fi mode).

Wi-Fi Internet Connectivity

Nintendo recently launched Nintendo Wi-Fi Connection, which allows wireless gameplay. Connection to the Nintendo Wi-Fi network is currently available at public venues, such as coffee shops and libraries, as well as through a home Wi-Fi network. DS Wi-Fi hotspots are now available at McDonald's restaurants through a deal that Nintendo made with Wayport. Additionally, Nintendo announced a similar partnership with FatPort to create free hotspots in Canada

Jim Merrick, Director of Marketing for Nintendo of Europe, has confirmed there will be around 25,000 hotspots in Europe, including 7,500 in UK alone.

Nintendo DS Wi-Fi works with existing hotspots, but networks that use a captive portal to authenticate users are incompatible because games do not currently include the web browser software necessary to communicate with most captive portals.

A home Wi-Fi connection is also available via an official accessory, the Nintendo Wi-Fi USB Connector, revealed during the *DS Conference 2005* in Japan and which is available at the Nintendo official site, the Nintendo World Store in New York City, and various other retailers such as BestBuy. The Wi-Fi network expands multiplayer (exclusively for games designed for online gaming) capabilities beyond the range of 30–100 feet, allowing users at the hotspots to interface with each other from around the world. Mario Kart DS, Tony Hawk's American Sk8land, and Animal Crossing: Wild World are the only games thus far to be released with online capability. Future titles currently scheduled for such online compatibility include Metroid Prime: Hunters, Final Fantasy: Crystal Chronicles DS, Tetris DS, and Mario Basket 3on3.

In its first week of release, Nintendo announced that out of all the copies of Mario Kart DS sold in the United States, 45% of those buyers went online using the Nintendo Wi-Fi Connection. Comparatively, only 18% of all buyers who purchased Halo 2 for the Xbox went online within its first three weeks.

In that same week, a website called DSmeet claimed to be working on a "patch" to Nintendo Wi-Fi Connection's limitations concerning finding and meeting new friends online. Some rumors have been circulating that the founders of DSmeet are those who were once in the ill-fated Project Nitro, a group of programmers who attempted to bring a Nintendo DS Multiplayer games online. Could this be what they were doing all this time? (See "Hacking the Nintendo WiFi Multiplayer" for more info)

Battery life

The Nintendo DS contains a rechargeable Lithium-Ion battery. Although it is removable with the use of a Phillips-head screwdriver, it is only meant to be removed when it expires and must be replaced. Removing the battery will cause the loss of all of the unit's settings (user's birthday, username, etc.), but it will not affect saved data on DS flash cards or GBA cartridges.

Battery life is affected by multiple factors, including speaker volume, use of one or both screens, backlighting, and using wireless.

Expected battery life ranges from six to ten hours on a full four-hour charge. The biggest drain on battery life is the backlight, which can be turned off on the main menu screen or on selected games (such as *Super Mario 64 DS*). However, because the screens do not have the reflective backing of the GBA or GBA SP, deactivating the backlight renders the on-screen image very difficult to see, even with sufficient ambient light.

Replacement batteries may be purchased for USD $15 through Nintendo's online store.

Regional division

The Nintendo DS is region free in the sense that any console will run a DS game purchased anywhere in the world; it is the same system everywhere. However, some games which require both players to have a DS cartridge for multiplayer play will not work together if the games are from different regions (e.g. a Japanese DS game may not work with a North American DS game, though some titles, such as Mario Kart DS, are mutually compatible). With the addition of the Nintendo WFC, certain games can be played over the Internet with users of a different region game. For instance, players can compete in Mario Kart DS races around the world.

Software library

The Nintendo DS currently has over **100** games available in its library. In addition, over **100** titles are currently in development.

The Nintendo DS features games with the following ratings:

- Early Childhood: *0 games*
- Everyone: *73 games*
- Everyone (E10+): *17 games*
- Teen: *13 games*
- Mature: *1 game*
- Adults Only: *0 games*

Source: ESRB

Key first-party titles

The Nintendo DS software library contains such traditional Nintendo series as Super Mario, Mario Kart, and Metroid.

Some of the more popular first-party titles include:

Advance Wars: Dual Strike
Animal Crossing: Wild World
Brain Training for Adults
Kirby: Canvas Curse
Mario & Luigi: Partners in Time
Mario Kart DS
Metroid Prime: Hunters (Release March 2006)
Metroid Prime Pinball
Nintendogs
Super Mario 64 DS
WarioWare: Touched!
Yoshi Touch & Go

Major second and third-party titles

Castlevania: Dawn of Sorrow (Konami)
Meteos (Q Entertainment)
Feel the Magic: XY/XX (Sega and Sonic Team)
Resident Evil: Deadly Silence (Capcom) (Release 2006)
Seiken Densetsu DS: Children of Mana (Square Enix) (Release 2006)
Sonic Rush (Sega and Sonic Team)
Viewtiful Joe: Double Trouble (Capcom)

Accessories

Although the secondary port on the Nintendo DS does accept and support Game Boy Advance cartridges, Nintendo has emphasized that its main intention for its inclusion was to allow a wide variety of accessories to be released for the system, with the Game Boy Advance compatibility titles being a logical extension. Theorized accessories include GPS receivers or television tuners, as well as a variety of accessories already included in certain Game Boy Advance cartridges such as tilt-sensors, solar-sensors, and vibration generators. The first of which is the Rumble Pak. It was released on October 24, 2005 and bundled with Metroid Prime Pinball; it is sold separately on the Nintendo.com store for $10.

Nintendo has also released the Play-Yan, an adaptor which will allow the Game Boy Advance SP and Nintendo DS to play MPEG-4 videos and MP3 music from SD memory cards. The adaptor bears a superficial resemblance to the AM3 player (which allowed playback of pre-recorded movie files from read-only memory cards on a GBA); the memory card slots into the right hand side of the adaptor, which then plugs into the cartridge slot of the parent console. The adaptor has its own integrated headphone port, but uses the parent console's power supply, controls, and display. It is estimated that it will offer over 15 hours of MP3 playback and 4 hours of MPEG-4 playback from a fully-charged GBA SP.

The adaptor launched in Japan in February 2005 for approximately 5,000 yen ($47.47). Nintendo originally planned to release the adaptor in the U.S. by the end of 2005, but it appears their plans have changed, as the Play-Yan was not available in the U.S. as of December 2005.

Nintendo has also announced at E3 2005 that it would launch "Headset Accessories" for its VoIP program, DSpeak.

Marketing and Sales

The Nintendo DS is currently seen by many analysts to be in the same market as Sony's PlayStation Portable, although representatives from both companies have stated that each system targets a different audience. Nintendo particularly is attempting to differentiate the DS from other more traditional handheld game machines, including the PSP, and its own Game Boy line. Currently, the Nintendo DS is outselling the PSP in total worldwide unit sales with over 13 million units sold, as of January 2006. The system's promotional slogans revolve around the word "Touch": in the United States, Australia, and New Zealand: Touching Is Good; in Canada: Don't Touch, Touch; in Japan, and China: Touch!; and in Europe: Touch me!. The only exception to this is the new campaign slogan in the United Kingdom, *Open up and play*.

At the time of its release in the United States, the Nintendo DS retailed for $149.99 USD. The price dropped to $129.99 USD on August 21, 2005, one day before the highly-anticipated North American releases of Nintendogs and Advance Wars: Dual Strike.

The DS has come packaged with several deals. One such deal is the Teal and Pearl Pink bundles (the latter being exclusive to Toys "R" Us and Target stores) that include the "Best Friends" edition of Nintendogs, which is not sold separately. The most recent bundle is a Red DS bundle that includes Mario Kart DS. Both sell for $149.99.

Software Development

Nintendo only accepts official companies with a game development team, and sufficient experience in certain areas for their official developer support program. Additional information is available from Wario World, the Nintendo Software Development Support Group. An alternative method is to use publicly available knowledge from sites such as this one, and to use the tools available to create one's own programs. This development route requires a method for running programs from the GBA port. One example is the PassMe, developed by Natrium42. This adapter plugs into the DS game slot, and allows content to be booted from the GBA slot. To do this, you need an official game-pak to plug into the bottom of the adapter, which will authenticate the process. The other solution is to use FlashMe, which will boot applications from the GBA slot without the need of an adapter. However, to flash the DS, you need to either use a GBA Flash Cart, or use WiFiMe. The latter is a program that sends information to the DS through a wireless card in your computer, and is currently dead. To combat this, Nintendo has created a new firmware revision that blocks out WifiMe, and requires you to use a second revision of the PassMe, entitled 'Passme 2' to boot applications from the GBA slot.

Hacking the DS Wi-Fi

Ever since the Nintendo DS's released on November 21, 2004, several groups have been attempting to extend and build upon the DS Wi-Fi protocol. Darkain has led the reverse-engineering of the DS Wi-Fi and Ni-Fi protocols at the time the DS came out, which has influenced many of the available Nintendo DS Wi-Fi hacks and applications today.

DS Wi-Fi over the Internet

Interestingly, two groups (Project Nitro and Team Xlink) had claimed to be successful in tunneling the DS WiFi protocol over the internet creating online multiplayer possibilities around the world using the handheld and multiplayer-enabled Nintendo DS games.

However, Project Nitro never put out any software or evidence to support their claim, and have since completely disappeared. Team XLink claimed to have a workable system, but later publicly announced they were no longer working on tunneling the DS, claiming they were not making enough progress to warrant their continued efforts.

In both cases, it is all but certain there was never any tangible product created. Project Nitro was almost certainly a hoax (there have been similar tunneling hoaxes since then), and Team XLink probably never made as much progress as their over-confident claims lead the public to believe.

However, recently a new project entitled DSTunnel has come into being. It is a culmination of a hacker's work in reverse engineering the DS's Wi-Fi hardware. While it has shown promise, and a beta version has successfully been used to tunnel some games over the internet, it still has the requirement of the user having a RAlink RT2500 based Wi-Fi card for it to work.

Nintendo Wi-Fi Connection

Nintendo brought the Nintendo DS online in November 2005. The first games available for Nintendo's service were Mario Kart DS and Tony Hawk's American Sk8land, followed shortly by Animal Crossing: Wild World and Metroid Prime: Hunters are also online compatible. The Nintendo Wi-Fi service is completely free, and only requires a compatible router or Nintendo's own USB adapter.[14] A list of compatible home routers, which have been approved by Nintendo, can be found here [15].

Releases

North America and Japan

The system was launched in North America for $149.99 USD on November 21, 2004, in Japan for 15,000 yen ($135) on December 2. Well over three million preorders were taken in North America and Japan; preorders at online stores were launched on November 3, and ended the same day as merchants had already sold their allotment. Initially Nintendo planned to deliver one million units combined at the North American and Japanese launches; when it saw the preorder numbers, it brought another factory online to ramp up production. Nintendo originally slated 300,000 units for the U.S. debut; 550,000 were shipped, and just over 500,000 of those sold through in the first week. Later in 2005, the MSRP for the Nintendo DS was dropped to $129.99 U.S.

Both launches proved to be successful, but it is interesting to note that Nintendo chose to release the DS in North America prior to Japan, a first for a hardware launch from the Kyoto-based company. This choice was made to get the DS out for the largest shopping day of the year in the U.S. (the day after Thanksgiving, a.k.a. "Black Friday"). [16] Perhaps partly due to the release date, the DS met unexpectedly high demand in the United States, selling 1 million units by December 21, 2004. As of the end of December, the total number shipped worldwide was 2.8 million, about 800,000 more than Nintendo's original forecast. [17] At least 1.2 million of them were sold in the U.S. Some industry reporters are referred to it as "the Tickle Me Elmo of 2004". In June 2005 Nintendo informed the press that a total of 6.65 million units had been sold worldwide.

As is normal for electronics, some were reported as having problems with dead pixels (the correct term for this is "fixed pixels", as they "fix" themselves on a single or select group of colors) in either of the two screens. Return policies for LCD displays vary between manufacturers and regions, however in North America, Nintendo has chosen to replace a system with fixed pixels only if the owner claims that it interferes with their gaming experience. There are currently two exchange programs in place for North America. In the first, the owner of the defective DS in question must provide a valid credit card number and, afterwards, Nintendo will ship a new DS system to the owner with shipping supplies to return the defective system. The second is as follows: the owner of the defective DS in question must ship his/her system to Nintendo for inspection. After inspection, Nintendo technicians will either ship a replacement system or fix the defective system. The first option allows the owner to have a new DS in 3–5 business days. Policies followed by Nintendo in Japan are believed to be somewhat stricter.

North American launch games

The following 11 games were released within the system's launch period (the 30 days starting from November 21, 2004).

Asphalt Urban GT (Ubisoft)
Feel the Magic: XY/XX (Sega)
Madden NFL 2005 (Electronic Arts)
Mr. Driller: Drill Spirits (Namco)
Ping Pals (THQ)
Ridge Racer DS (Namco)
Spider-Man 2 (Activision)
Sprung (Ubisoft)
Super Mario 64 DS (Nintendo)
The Urbz: Sims in the City (Electronic Arts)
Tiger Woods PGA Tour (Electronic Arts)

At launch there was one pack-in demo, in addition to the built-in PictoChat program: Metroid Prime: Hunters - First Hunt (published by

Nintendo and is a demo for *Metroid Prime: Hunters*, a game coming in early 2006). At the time of the Electric Blue DS launch, Nintendo bundled the system with *Super Mario 64 DS*.

Japanese launch games

The following games were released at same time as the system's first release (December 2, 2004).

DaigassM! Band Brothers (Jam with the Band) (Nintendo)
Chokkan Hitofude (Polarium) (Nintendo)
Cool104 Joker & Setline (Aruze)
Kimi no Tame Nara Shineru (literally "I Would Die for You"; aka Feel the Magic: XY/XX) (Sega)
Kensyki "Dokuta Tendo" (Spike)
Mahjong Taikai (Koei)
Mr. Driller: Drill Spirits (Namco)
Pokémon Dash (Nintendo)
Super Mario 64 DS (Nintendo)
The Urbz: Sims in the City (Electronic Arts)
WarioWare: Touched! (Nintendo)
Zoo Keeper (Success)

In the launch period, the following titles were released.

The Prince of Tennis 2005 -Crystal Drive- (Konami)
Puyo Puyo Fever (Puyo Pop Fever) (Sega)

Europe

The DS was released in Europe on 11 March 2005, for £99.99 in the United Kingdom and €149 in the rest of Europe. Prior to this, a limited supply of DS units were available in a package with a promotional T-shirt, Metroid Prime: Hunters - First Hunt, a WarioWare: Touched! demo, and a pre-release version of Super Mario 64 DS, through the Nintendo Stars Catalogue; the bundle was priced at £129.99 for the UK and €189.99 for the rest of Europe, plus 1,000 of Nintendo's "star" loyalty points. As of 14 March, 600,000 DS's had been sold in Europe, setting a sales record for a handheld.

The European version of the DS, like the U.S. release, is packaged with a *Metroid Prime: Hunters - First Hunt* demo. The European packaging for the console is noticeably more "aggressive" than that of the U.S./Japanese release.

The European game cases are about 1/4 thicker then their North American counterparts, they are also transparent rather than solid black. Inside the case there is room for one Game Boy Advance game pak and a DS card with the instructions on the left side of the case.

European launch games

Asphalt Urban GT (Ubisoft)
Mr. Driller: Drill Spirits (Namco)
Ping Pals (THQ)
Pokémon Dash (Nintendo)
Polarium (Nintendo)
Project Rub (aka Feel the Magic: XY/XX) (Sega)
Rayman DS (Ubisoft)
Robots (VU Games)
Spider-Man 2 (Activision)
Sprung (Ubisoft)
Super Mario 64 DS (Nintendo)
Tiger Woods PGA Tour (Electronic Arts)
The Urbz: Sims in the City (Electronic Arts)
WarioWare: Touched! (Nintendo)
Zoo Keeper (Ignition)

Australia/New Zealand

The DS launched in Australia and New Zealand on 24 February. It retailed in Australia for $199 AUD and in New Zealand for $249 NZD. Like the American launch, it includes the Metroid Prime: Hunters - First Hunt demo.

The first week of sales for the system broke all current Australian launch sales records for a console. 19,191 units were sold from Thursday 24 February to close of business Sunday 27 February.

Australian/New Zealand launch games

Asphalt Urban GT (Ubisoft)
Ping Pals (THQ)
Project Rub (Sega)
Spider-Man 2 (Activision)
Sprung (Ubisoft)
Super Mario 64 DS (Nintendo)
Rayman DS / Rayman 2 (Ubisoft)
WarioWare: Touched! (Nintendo)
Zoo Keeper (Ignition)

China

"iQue DS", which is the name of official Chinese Nintendo DS, was released in China on July 23, 2005. The price of iQue DS is 1400 RMB (about $169 USD). The iQue DS is compatible with all of the language versions of every game. This new iQue DS includes updated firmware from Nintendo to block out use of the PassMe device, along with the new Red DS.

Chinese launch games

Zhi Gan Yi Bi (Polarium) (Nintendo/iQue)
Momo Waliou Zhizao (WarioWare: Touched!) (Nintendo/iQue)

Colors

As with Nintendo's previous handheld consoles, the DS has been produced in a number of different colors. As of August 2005, six official colors are available through standard retailers. Titanium (silver and black) is available worldwide, Electric Blue is exclusive to North America, and Graphite Black, Pure White, and Turquoise Blue are exclusive to Japan. Candy Pink is exclusive to Europe and Japan. Mystic Pink and Cosmic Blue are exclusive to Australia.

Special editions

- Five variants of existing DS colors were produced for the Japanese online Super Mario Club. Each color has a wireframe of a character's face imprinted on the front cover of the system. The designs include Titanium/Mario, Graphite Black/Bowser, Gray/Wario, Candy Pink/Princess Peach, and Turquoise Blue/Yoshi.

- Additionally, Nintendo auctioned off three custom DS systems for charity at the Sundance Film Festival in Park City, Utah. The systems went to Jay Mohr for $10,000, Poppy Montgomery for $2,500, and Alan Cumming for $1,500. Nintendo added money to the final bids, and a portion of the funds went towards victims of the 2004 Indian Ocean earthquake.

- Rapper 50 Cent ordered a custom-made DS from Nintendo, featuring a khaki camouflage design, and the G-Unit insignia on the front cover.

Limited editions

Various other colors have been made available in limited quantities:

- Special dark blue DS systems were released at Poképark in Japan. The systems have the Poképark logo on the front cover, and a Pikachu silhouette superimposed over the right speaker grill
- A light blue DS, with a limited run of 1,000 units, was also released in Japan as part of a joint promotional offer with Pepsi
- Nintendo released a gold-colored DS system in Japan; it is exclusive to Japanese Toys "R" Us stores
- A DS with Mew has been released in Japan. It is tinted purple with the Pokémon lightly printed on the front and adjacent to the top screen.

Promotional packages

- The red DS model, released in Japan on August 8, 2005, is part of a promotional offer that includes the game Jump Superstars.
- In October 2005, Nintendo released two new colors to North America: Teal and Pearl Pink (not the same Candy Pink as was released in Europe and Japan, but a scheme identical to that of the Mystic Pink model released in Australia). These systems are bundled with the game Nintendogs Best Friends Version, as well as a bone-shaped screen cleaner.
- The Electric Blue was released in North America, bundled with Super Mario 64 DS, for the same price as a lone DS ($149.99) in June 31, 2005. 1 million copies were sold, making SM64DS the best selling game during that time.
- The Nintendo DS: Blue and Pink Nintendogs Bundles were released in Europe on October 7, 2005. The two packs contain a pink Nintendo DS system and the Dachshund version of Nintendogs, or a blue Nintendo DS system and the Labrador version of Nintendogs. These were priced at the same price as a lone Nintendo DS (£99). On that same day, the Nintendo DS received a price cut to £89.
- The Mario Kart DS Pak was released in Europe on November 25, 2005, which contained a silver-coloured Nintendo DS and a

copy of Mario Kart DS.

- The Red Hot Bundle was released in North America on November 29, 2005, including a red & silver DS system ("Hot Rod Red"), optional racing decals, a normal DS wrist strap/ thumb pad, a bonus checkerboard wrist strap (strangely, with no thumb pad), a Mario Kart metal charm, and a copy of Mario Kart DS.

Trivia

- Several games have been released with titles or subtitles that form acronyms of the letters DS, including Advance Wars: Dual Strike, Castlevania: Dawn of Sorrow, Dig Dug: Digging Strike, Dust & Shadows, Fullmetal Alchemist: Dual Sympathy, Guilty Gear Dust Strikers, Lunar: Dragon Song, Resident Evil: Deadly Silence, Super Black Bass: Dynamic Shot and World Championship Poker: Deluxe Series.

- In Japan and North America the Nintendo DS is out-selling the Sony PSP (its main rival) 3 to 1.

- Recent figures have shown that Nintendo owns 83% of the worldwide hand-held market, with the Game Boy Advance holding 48%, the DS at 35%, while the PSP holds 13%.

- It is sometimes considered by fans to be the succesor of another Nintendo handheld, the Virtual Boy. One of these reasons is because both systems sport 3D graphics and other parts that make them different from the Game Boy systems. Coincidentally, Metroid Prime Pinball for the DS is seen as the spiritual sequal to the Virtual Boy's Galactic Pinball, mainly because both are space pinball games and have Samus in them.

See also

- Comparison of Handheld gaming consoles
- History of video games

Other current handhelds

- Game Boy Advance SP

- Game Boy Micro
- PlayStation Portable
- Nokia N-Gage
- Gizmondo

Home | Up

Nintendo Revolution

Manufacturer

Nintendo

Type

Video game console

Generation

Seventh generation era

First available

Late 2006

Media

Unspecified 12cm DVD format

GameCube optical disc

Online service

Nintendo Wi-Fi Connection

The **Nintendo Revolution** is the current codename for Nintendo's fifth home video game console and the successor to the Nintendo GameCube. Its main innovation will likely be its controller that responds to its own position and orientation in 3-D physical space in front of the television, a concept never before seen in mainstream consoles. Another innovation is that its slot-loading optical drive is the first that accepts both 3 and 5 inch discs, GameCube and dual-layered DVD based media.

The system was unveiled at Nintendo's 2005 E^3 press conference and the game controller at the 2005 Tokyo Game Show by Satoru Iwata during his keynote speech in September. Promotional material released at the 2005 Tokyo Game Show stated the console was scheduled for a 2006 release. In an interview with Nikkei Business, Iwata stated the Revolution will be coming out after April of that year, and that they are considering attempting an international launch with no more than 14 weeks of difference between the first and last launching regions. Nintendo has announced that more details about the system will be made public on May 9, 2006. The latest sources point towards a November 2006 launch date.

Nintendo has had a tendency to be coy with release of information regarding the Revolution, leaving some media outlets with the false idea that Nintendo was not prepared or did not have the intention to compete with Microsoft's Xbox 360 and Sony's PlayStation 3. Top executives at the company denied that and insisted that they were simply protecting their intellectual property from imitation by competitors before the system is released. Nintendo has standardized technologies within the gaming console world such as the D-Pad, analog control thumbstick, first party wireless controllers (Wavebird), shoulder buttons, and vibrating feedback, which have been widely disseminated following their mainstream arrival on Nintendo's machines.

Confirmed hardware and technology

CPU/GPU

IBM will be developing the CPU, codenamed "Broadway". IBM previously developed the processor in Nintendo's current system, the GameCube. One source has claimed that it is just an expansion on the GameCube's CPU, although this has not been verified. Nintendo has also announced that Canadian graphics card maker ATI Technologies is developing the GPU, which is codenamed "Hollywood". Before the GameCube's release, ATI had bought ArtX, the company responsible for the GameCube's GPU and whose members were former Silicon Graphics employees involved with the Nintendo 64 graphics chip. Absolutely none of Hollywood's specs have been confirmed yet, although it was explained by ATI's Public Relations Manager for

Consumer Products, John Swinimer, that "Hollywood" has been developed from scratch.

Connectivity

The Revolution will have built-in Wi-Fi, allowing certain games to be played online via a wireless hotspot. Nintendo is providing an optional PC-compatible wireless router for use by consumers that do not already have access to a wireless connection. The accessory is also compatible with the Nintendo DS. While no Ethernet port is planned, Nintendo has suggested Ethernet may be possible for the system with USB via an adaptor.

Memory and game storage media

MoSys, whose 1T-SRAM memory technology was used in the GameCube, will again provide the RAM technology for the Revolution. Several sources have stated that the memory will be slightly tweaked/ improved.

The Revolution will use standard DVD/CD size optical discs. It will have the ability to play DVD movies with an undisclosed add-on (most likely a hardware dongle). It will be able to hook up to a computer monitor (via component video) as well as a TV, but at this point in time, Nintendo is not supporting HDTV output. The standard output will be 480p.

Design

Nintendo also has said the console will be "sleek", approximately the thickness of three DVD cases (pictures are of the prototype, which is larger), thinner than the Xbox 360 and PlayStation 3. It will stand both horizontally and vertically. This new industrial design may also address remarks regarding the GameCube's unique look which many complain does not fit in amongst most home entertainment components. The console has also been stated to be a quieter system in comparison to the fan noise output by some gaming consoles and will also be more affordable than its competitors.

Controller

The Nintendo Revolution controller, unveiled at Tokyo Game Show 2005, has a shape reminiscent of a television remote control and operates like a mouse in three-dimensional real-space. The controller is also a reminiscent of the Nintendo 64 and NES in terms of the buttons.

The controller is a major departure from the last twenty years of console design. Two sensors near the television allow the controller to sense its position in three-dimensional space; other sensors in the controller itself allow it to sense its tilt and yaw. Players can thus mime actions (and receive "rumble pak" style vibration feedback) instead of simply pushing buttons. An early marketing video showed actors miming such actions as fishing, cooking, drumming, conducting an orchestra, shooting a gun, sword fighting, and performing dental surgery. To communicate with the sensors, the Revolution's controller uses Bluetooth technology.

A digital directional pad is positioned at the top of the controller face, with a large GameCube-styled A button directly below it and a trigger on the underside acting as the B-button. Below the A button is a row of three small buttons: Start, Home, and Select. Near the bottom end of the controller are two additional buttons labeled lowercase a and b (labeled X and Y in promotional videos with the lowercase a and b able to be read when the controller is turned 90 degrees counterclockwise), suggesting that users can turn the controller 90 degrees and use it like a classic NES controller. Beneath these buttons are four lights which indicate which "port" is being used--at present, up to four players are expected to be able to play on a single Revolution console.

The controller can also slip inside or be attached to peripherals through a proprietary port on its bottom end. A tethered peripheral with an analog stick and two shoulder buttons (labeled Z1 and Z2) will, according to Satoru Iwata, be bundled with the free-hand controller (letting the user play games "nunchaku-style").

A "shell" peripheral is also slated to release for the Revolution that will be *"very similar in style and form to the Wavebird"*. The official name for this is the "Classic-Style Expansion Controller". According to Iwata, it is meant for playing *"the existing games, virtual console games, and multi-platform games"* (TGS 2005 keynote, 40:43). The freehand controller will slide into a hole in the top of the classic controller, and thus it will retain the freehand controller's position sensing capabilities. IGN has an article called "Understanding the Revolution Controller", which discusses the shell as well as includes a mock-up of what the shell might look like.

Nintendo promises a wide variety of peripherals ranging from dance mats to analog game controllers. It is possible that they may be inexpensive enough to be bundled with games much like the rumble pack, expansion pack, and microphone for Star Fox 64, Donkey Kong

64, and Hey You, Pikachu!/Mario Party 6 respectively.

Mr. Iwata has confirmed that the sensors will be compatible with any television, including projectors.

Also, Miyamoto added before exiting the stage [of Japan's Digital Interactive Entertainment Conference], "there are still secrets to this controller, and these will be revealed next year."

It is speculated that Nintendo may opt to place a microphone into the controller, or possibly an add-on headset peripheral. Nintendo has continuously shown interest in voice-controlled/influenced games, as shown in the Nintendo DS title Nintendogs and the GameCube titles Mario Party 6 and Mario Party 7, which both use the GameCube's microphone peripheral. Nintendo has also stated that the odd real-time Japanese war/pinball simulator, Odama, will also use the GameCube's microphone peripheral for directing troops. Also, it should be noted that a microphone/headset could be useful for communication during online play, as that in the Nintendo Wi-Fi Connection.

Technical specifications

Nintendo has released very little detailed information at present concerning the technical specifications of the Revolution console. According to a recent interview with Nintendo of America's Jim Merrick, Nintendo may never release a complete system specification

Some details have however been released by Nintendo and other third parties involved with the console:

Processors:
IBM PowerPC "Broadway" CPU :
ATI "Hollywood" GPU :
Memory:
1T-SRAM and DRAM
512 MB built-in expandable flash memory
Ports and Peripherals:
Two USB 2.0 ports.
Wireless controllers.
Possibly a single proprietary output for video and audio.
4 Nintendo GameCube controller ports and 2 Nintendo GameCube memory card ports (for compatibility).
Optional USB PC-compatible 802.11b wireless router.
Media:
Slot loading optical disc drive compatible with both 12 cm and 8 cm proprietary optical discs (again, for GameCube compatibility) as well as standard DVD discs. The proprietary optical discs will hold 4.7 GB (single layered) and 8.5 GB (double layered).

2 front loading SD memory card slots.
Nintendo has announced that the Revolution will have a content ratings system in its console, having age restrictions as follows: PEGI 3+, 7+, 12+, 16+, 18+, and ESRB EC, E, E10+, T, M, and AO.
Networking:
Wi-Fi by the Broadcom Corporation:
Built-in 802.11b & 802.11g support.
No Ethernet port built-in, though Iwata has mentioned that a USB-attachment Ethernet port peripheral will be released, though no further information is known.
The final version will be smaller than the prototype presented E^3, which was described as being "about the size of three stacked standard DVD cases".

Features

Backwards compatibility

The Nintendo Revolution has reportedly been designed to be compatible with Nintendo GameCube software and most peripherals. Standing vertically, the top of Revolution has four GameCube controller ports that will allow the system to be compatible with ordinary GameCube controllers, Nintendo's wireless Wavebird controller, the DK Bongos, the Nintendo GameCube Game Boy Advance cable, and the Dance Dance Revolution Mario Mix dance pads. It also features two memory card slots that should be fully compatible with all generations of GameCube memory cards ("Memory Card 59", "Memory Card 251", and "Memory Card 1019") and the Nintendo GameCube Microphone. The Nintendo Revolution is designed to accept the smaller Nintendo GameCube discs through the same slot-loading disc drive that will accept standard-sized Revolution game discs and DVD movies; this is a first for slot-loading disc drives, which typically only accept discs of one standard size. Nintendo is no stranger to backwards compatibility, as the Game Boy Advance can play older Game Boy Color and original Game Boy games, and the DS can play Game Boy Advance games. However, it is unclear if it will have the high-speed port required for use with the Game Boy Player accessory, but it is unlikely because of the difference in the Revolution's and the GameCube's size (book shape versus a cubic footprint with different measures).

Virtual console

Nintendo has announced that Revolution will have the ability to play many or all Nintendo-produced Nintendo 64, SNES/Super Famicom, and NES/Famicom games; the software may be recompiled or emulated but will be offered via the Nintendo online download service. Satoru Iwata refers to this feature as the "Virtual Console". According to a Japanese press release, "all downloaded games will be stored on the 512 [MiB] flash memory built into the system. To prevent illegal copying, downloaded games will feature a proprietary DRM system."

Nintendo announced that the downloadable games may be redesigned, recompiled, or emulated. It was also said that although the gameplay would stay the same, it would be possible "that with Revolution, we may be able to see the old games with new looks." This may be compared to the 1993 SNES release Super Mario All-Stars, a single cartridge containing several classic Super Mario Bros games with updated graphics. Some 3D games may "look sharper when played on Revolution." However, Jim Merrick, a European Nintendo president, claimed N64 games played on Revolution will have a better frame rate, but that there would not generally be any other significant graphical improvements. If the technical aspects of Revolution also go well, "[Nintendo is] discussing the possibility of having older games like *Mario Party* playable online." Also said by Merrick, there's a possibility for users to download games from others regions, a feature important to European gamers who could download (for example) Super Mario RPG from an American server.

Although no specifics have yet been released, there will be fees associated with the "virtual console" feature. Nintendo has suggested that they may give some of the downloadable games away with Nintendo products or through other special offers. It is also unknown what specific titles will be available or whether third-party developers will release their older games for the Revolution, although it has been said that Nintendo is in talks with these developers for this purpose. Yuji Naka, the designer of Sonic the Hedgehog at Sega, said in an interview with Famitsu, "It's also great that we'll be able to play Famicom and other games via download. I hope Sega games will be playable as well." He also said similar in a recent interview with Nintendo Power. Currently, Nintendo could release more than 200 potential titles (and if, like it has been rumoured, the Revolution is indeed compatible with the Game Boy Player accessory, then over 90 percent of Nintendo's back catalogue could be playable on the system (excluding Virtual Boy software).

Some see Nintendo trying to pattern the most successful strategy used by the music industry against illegal music downloads. Since computers have been powerful enough to emulate past-generation home consoles and the Internet provided an easy, fast, and widely accessible distribution path for ROM images and emulators, illegal ROM downloading has been common among a segment of fans of old games. The music industry's most successful method of reducing illegal music downloading has apparently been to offer consumers a way to download music legally for a small cost, as in the case of Apple, selling music in their iTunes music store for a general price of $1.00 USD. If Nintendo is successful at utilizing this model, they may be able to reduce illegal ROM downloading and open up a new revenue stream. This backward-compatibility feature also stands as a new unique selling point against the Revolution's competitors.

The unveiling of the new controller has also shed some light on the functionality of the backwards compatibility; specifically, when held sideways, the controller resembles the NES controller; on the left is a D-Pad, in the middle are Select and Start Buttons, and there are two buttons on the end serving as "A" and "B" buttons.

Nintendo recently filed a patent on the interface of the virtual console, suggesting that it will be a full emulator, as opposed to using re-written games, and that it may be possible to have extra features such as new characters added to the game.

An official survey conducted for Nintendo of America by marketing company Zanthus may give an idea what the "virtual console" could look like and how it might function, along with potential (but not official) prices.

Parental controls

The Revolution will feature parental controls, prohibiting young viewers from viewing inappropriate content. This allows parents to set the age level of the system, and when a disc is inserted, it will read the content rating encoded on the game discs; if this rating is greater than the system's age level setting, the game will not load unless the user correctly enters a password to override the setting. For instance, a game carrying an ESRB rating of M for Mature, which is intended for those over the age of 17, will not play on a system that is set to only allow games rated E for Everyone (ages six and older).

This will be found in all systems released around the world; it is confirmed that the European units will use the PEGI rating system, North American units will use the ESRB rating system, and units for the Japanese market will presumably use the CERO rating system. It is unknown what effect this will have on importing and playing games from one region on another region's machine; since Nintendo's consoles are also region locked, it is likely that whatever method importers use to circumvent the regional lock-out would have to override the parental lock-out as well.

Some politicians have expressed that they are pleased with the concept of hardware based parental controls. For instance, an article listed on Nintendo's website claims that the governor of Washington state, Christine Gregoire, feels that it "gives parents more information and more control over what video games their kids play and at what age."

However, this *may* prove unreliable as most parental control systems have a very easy way to reset the password, in case one forgets the password. This method is usually, in fact, in the instruction manual, and therefore, most anybody could bypass a parental lock. Details are currently unknown. The Xbox 360 and the PlayStation video game consoles will feature this as well.

Games in development

Many games featuring Nintendo's classic franchises, such as Mario (most likely the long awaited Mario 128), The Legend of Zelda, Metroid and Super Smash Brothers, have been announced. It has also been hinted that older games such as Kid Icarus will be on the Revolution as well, though as of most of the Revolution's details this has only been based on speculation. Nintendo has also announced that it is in the process of developing an entirely new and original franchise to be added into the Nintendo universe, although all other details about this project are unknown at this time. It has been speculated that the new franchise might be more mature than most previous Nintendo games. Square Enix is working on a sequel Crystal Chronicles title, Ubisoft is releasing Splinter Cell 4 on all major consoles including Revolution, and has announced an exclusive FPS and another non-exclusive game. The exclusive title is being coined off as a 'Doom' clone. Blitz has announced that Possession will come to all three next-gen consoles. Koei and Namco/Bandai (merging) have made announcements that they will make games for Revolution but not what games yet. Also, Camelot has announced that they are currently working on a Revolution RPG. This game could possibly be a sequel to Golden Sun: The Lost Age. Killer 7 producer Goichi Suda, aka Suda 51, has confirmed that Grasshopper Manufacture is planning to make a Revolution game. [24] According to Game Informer, Hideo Kojima is developing a Revolution game with the team from Kojima Productions that developed Metal Gear Acid. [25] A new video game company called NIBRIS is said to make an exclusive game called "Raid Over The River." It will be a futuristic overhead shooter. On December 8, 2005, Electronic Arts officially declared its support for the

Revolution.

Rumors and speculation

Hardware and specifications

- The GPU is believed to be developed by the same team formerly known as the Californian firm ArtX which developed the graphics chip of both the GameCube and its predecessor, the Nintendo 64, before being purchased by ATI. In an interview with ATI employee John Swinimer, it was revealed that the "Hollywood" graphics chip was built "from the ground up".

- The Revolution may support a physics processing unit, with 32 MB of RAM. It will link to the CPU, GPU, and controller.
  - Additionally, Jim Merrick of NoE stated that the hardware specs won't be released far from the Revolution's launch, if ever. This is an attempt to put down the importance of specifications, and the fact that non-gamers, an audience they're trying to reach, may not care.
  - In another statement, Jim Merrick claimed that "there would be no significant difference between the graphical abilities of the console compared to other next generation systems".

- Nintendo has been strongly hinting that not every major feature with regards to the Nintendo Revolution, and specifically its controller, has been revealed, likening it to the way that they first only revealed the fact that the Nintendo DS would have two screens, and only later revealing that it had a touchscreen, microphone, and wireless capabilities. According to Nintendo of Europe's Jim Merrick, they *"have not shared everything that there is to know about Revolution or its controller.*

- Recently some patents filed by Nintendo were discovered, indicating that the Revolution may support "emboss bump mapping", a technique used by many game developers to achieve bump mapping effects with less resources.

- On December 30, 2005 Nintendo released to a few select news sources that the Revolution will sell for less than $299.

- An interview at Spanish website Meristation suggests that the controller will provide force feedback, possibly through the use of gyroscopic technology.

Games

- There is speculation that there may be up to 15 games ready for launch. A third *Super Smash Bros.* game with online play is said to be bundled in with the Revolution.

- *Mario Revolution* is likely to be the long developed *Super Mario 128*, considering comments by Mr. Miyamoto.

- *Pilotwings 3* may be slated for a Nintendo Revolution release, after being cancelled for the GameCube.

- *Animal Crossing Revolution* has been confirmed by IGN.

- In an interview with IGN, Shigeru Miyamoto hinted that a new Kid Icarus may be in development for the Nintendo Revolution.

- Raid over the River, a game developed by NIBRIS, based in Poland, is currently being developed exclusively for the Nintendo DS and the upcoming next-generation Nintendo console. NIBRIS has found a Publisher for both systems.

- Mr. Miyamoto said in an EGM interview that he is thinking of making a Pikmin game for Revolution.

- Third-party developers such as Activision, Atari, Capcom, Midway, Sega, EA Games, and THQ have made positive comments about the Revolution and will most likely be supporting the system, but have not announced any specific games themselves.

- Konami may be in the process of developing two projects for Revolution.

- Classic Sega titles may also be made available for download, in addition to classic Nintendo titles. This potentially includes titles released for the SG1000, Sega Master System, Sega Genesis/Megadrive, Sega CD, Sega 32x, and Sega Saturn. Some of the CD-based games would need to be either stored on external SD cards that the Revolution supports or delivered on optical discs, given the system's expected 512MB of internal storage. These rumors were sparked by comments made by Sega on the Nintendo Revolution.

- Nintendo may utilize an internally developed proprietary visual distortion method to be applied to all of the games compatible with the Nintendo Revolution, including NES, SNES, N64, and GameCube titles.

- Due to the style and features of the controller it may be possible to play NES games that use the NES Zapper as well as the SNES Super Scope, such as Duck Hunt and Yoshi's Safari

- It has been rumored that the Nintendo Revolution will have the ability to download Nintendo DS video game demos that will be able to be received on the Nintendo DS.

- There have been rumors on the Internet about a first person shooter called "No End Soon".If this is true, this could possibly be the exclusive FPS that Ubisoft is making. It is interesting to note that if one brightens up the video, an object that just might be the transceiver for the controller can be seen above the TV.

- NGC Magazine claims that The Legend of Zelda: Twilight Princess, when inserted into the Nintendo Revolution, will utilize its native "free-hand" controller. Nintendo later issued a statement, declaring NGC Magazine's rumor to be just that: pure speculation. NGC Magazine then rebutted Nintendo's rebuttal, claiming that a senior source within Nintendo positively confirmed the alleged controller features.

Possible absence of high definition support

Online arguments commenced when Nintendo of America's Vice President of Corporate Affairs, Perrin Kaplan, announced there would be no HD support for their upcoming system. Kaplan stated beautiful graphics and innovative gameplay could be achieved without HD and that abstaining from the technology would help keep the cost of games down. In reaction, major Internet based magazines like IGN.com organized letter writing campaigns to protest against Nintendo regarding the decision and urging consumers to take action

480p support

It has been confirmed that the Revolution will support 480p (a.k.a. EDTV), as did the GameCube, and the lack of HD support is not yet a final decision. Regardless, the support of 480p will mean an improvement in graphics quality when properly hooked up to and viewed on an HDTV set when compared to viewing on a regular

(480i) television set.

1080up.org

1080up.org is an online movement started by video game enthusiasts in hopes of influencing Nintendo’s final decision regarding HD support for the Revolution. It contains information explaining what high definition is and why they feel it's important for the Revolution to support it, plus, ideas for ways people can get involved in lobbying Nintendo to change their minds. So far, no clear changes or announcements on Nintendo's part have resulted from it.

Miscellaneous

- Nintendo will probably have multiple colors for the Revolution. Five colors were shown at E^3: White, Silver, Black, Red, and Lime.

- The Revolution may have connectivity with the Nintendo DS and the next Game Boy system. Nintendo Power magazine has said this is likely in its July 2005 issue. A reported interview with Shigeru Miyamoto seems to confirm this; however, the legitimacy of the source is unknown.

- It has been suggested that the reason that Nintendo released the information about the real-space controller was because they caught wind of a "pitch" and "yaw" handheld extension of the EyeToy that was being considered for the PlayStation 3 and therefore released the information to avoid accusations of plagiarism.

- Nintendo or a third-party company may develop an Ethernet port accessory compatible with the system's USB 2.0 ports.

See also

- Nintendo GameCube
- Nintendo DSHome | Up

PlayStation

PlayStation

Manufacturer

Sony

Type

Video game console

Generation

32-bit / 64-bit era

First available

December 3, 1994 (JP)

September 9, 1995 (US)

September 29 1995 (EU)

Media

CD-ROM

Units sold

100 million (2005)

Top-selling game

Final Fantasy VII

The **PlayStation** (Japanese: ×ì¤¹Æü·çó) is a video game console of the 32-bit era, first produced by Sony Computer Entertainment in the mid 1990s. The original PlayStation was the first of the PlayStation series of console and hand-held game devices, which has included successor machines including the PSone (a smaller version of the original), PocketStation, PlayStation 2, PlayStation Portable, and the forthcoming PlayStation 3.

By June 2005, the PlayStation/PSone had shipped a total of 100 million units, becoming the first home console to ever reach that mark.

History

Development

Nintendo asked Sony to develop a CD-ROM add-on called "PlayStation" for the SNES. Because Sony wanted 25% of all profits Nintendo earned from sales of this PlayStation and all PlayStation games, after Sony revealed that they were developing it, Nintendo instead went to Philips. This caused Sony to consider abandoning their research, however instead they used what they had developed so far and made it into a full blown console. This led to Nintendo filing a lawsuit claiming breach of contract and attempted, in U.S. federal court, to obtain an injunction against the release of the PlayStation, on the grounds that Nintendo owned the name. The federal judge presiding over the case denied the injunction.

- *A rarely-noticed Easter egg tying in with the console's SNES roots lies in the PlayStation's controller design. The four face buttons on the right (Circle, Square, Triangle, and X) seem to be based off the magic attack cast by the Magikoopas found in Super Mario World and Kamek in Super Mario World 2: Yoshi's Island. The spell consists of three spinning geometric shapes (a circle, a square, and a triangle) followed by a trail of sparks that appear X-shaped.**

Launch

The PlayStation was launched in Japan on December 3, 1994, the USA on September 9, 1995 and Europe on September 29, 1995. In America, Sony enjoyed a very successful launch with titles of almost every genre including Toshinden, Twisted Metal, Warhawk, and Ridge Racer. Almost all of Sony's and Namco's launch titles went on to produce numerous sequels.

Titles

The console was extremely popular, spawning the so-called "*PlayStation Generation*". Well known titles on the PlayStation include Tomb Raider, Final Fantasy, Resident Evil, Tekken, Wipeout, Gran Turismo, Crash Bandicoot, Spyro, Parasite Eve and Metal Gear Solid. As of May 18, 2004, Sony has shipped 100 million PlayStation and PSone consoles throughout the world. As of March 2004, there were 7,300 software titles available with cumulative software shipment of 949 million. The PlayStation logo was designed by Manabu Sakamoto, who also designed the logo for Sony's VAIO computer products.

Variants

The first new version was actually a revision in early 1996, produced in response to complaints that PlayStations were overheating. Sony did not change the technical aspects or the cosmetics, but did remove the S-video port left over from the Japanese release.

Sony produced a redesigned version of the original console, called the "**PSone**", in a smaller (and more ergonomic) case which was introduced in September 2000. The original PlayStation was abbreviated in Japan to "PS" and was often abbreviated as "PSX" by American gamers, as this was Sony's internal code name for the system while it was under development. This led to some confusion in 2003, when Sony introduced a PS2-derived system in Japan actually called the PSX. The PlayStation is now officially abbreviated as the "PS1" or "PSone," although many people still abbreviate it "PS" or "PSX". There were only 2 differences between the "PSone" and the original, the first one being cosmetic change to the console, and the second one was the home menu's Graphical User Interface.

A version of the PlayStation called the Net Yaroze was also produced. It was more expensive than the original PlayStation, coloured black instead of the usual gray, and most importantly, came with tools and instructions that allowed a user to be able to program PlayStation games and applications without the need for a full developer suite, which cost many times the amount of a PlayStation and was only available to approved video game developers. Naturally, the Net Yaroze lacked many of the features the full developer suite provided. It was unique in that it was the only officially retailed Sony PlayStation with no regional lockout; it would play games from any territory.

Another version that was colored blue (as opposed to regular console units that were gray in color) was available to game developers and select press. It had twice the main RAM size (4 megabytes instead of 2 megabytes) and a CD-ROM emulator board connected to a PC. It was also able to run in-development games which lacked region coding (which would be rejected by a normal PlayStation as though they were pirated copies). A few of these units eventually appeared for sale through somewhat dubious channels at high prices.

The installation of a modchip allows the PlayStation's capabilities to be expanded. This allows unauthorized copies of games to be played, but it also allows the playing of games from other regions, such as PAL titles on a NTSC console. Since modchips allow playing games recorded on a regular CD-ROM, it created a wave of games developed without official Sony approval, using free GNU compiler tools.

Successors

Sony's successor to the PlayStation is the PlayStation 2, which is backward compatible with its predecessor, in the sense that it can play almost every PlayStation game. This was done by embedding the most important parts of the PSone inside the PlayStation 2 design. Unlike emulators that run on the PC, the PlayStation 2 actually contains the original PlayStation processor, allowing games to run exactly as they do on the PlayStation. For PlayStation 2 games this processor, called the IOP, is used for input and output (memory cards, DVD drive, network, and hard drive). Like its predecessor, the PlayStation 2 is based on hardware developed by Sony themselves.

The next generation of the PlayStation is known as PlayStation 3, or PS3, and due to be launched in 2006. Sony has stated the PS3 will also be backward compatible with all games that were originally made for PlayStation as well as the PlayStation 2.

The PlayStation Portable (officially PSP) is a handheld game console first released in late 2004. Despite the name, it is not compatible with PlayStation games; it only runs games developed specifically for the PSP on the UMD format.

The success of the PlayStation most likely led to the eventual demise of cartridge-based home gaming consoles. Nintendo abandoned cartridge technology on video game consoles after the Nintendo 64.

Criticism

On the tenth anniversary of the PlayStation, Sony Italy released an ad which outraged the Vatican. An ad showed a man, who appeared to be Jesus, smiling towards the camera and wearing a Crown of Thorns made of the PlayStation button symbols (Square, X, O, Triangle). At the bottom of the ad it said (in Italian): "Ten Years of Passion". After the incident, Sony decided to take back all the ads and discontinue the printing.

Many consumers also were not happy that the PlayStation's laser track, which allowed the laser to move back and forth as it looked for data on the CD, would burn out easily if used extensively over time. This caused many people to start experiencing longer loading times, and other loading problems. Users remedied this by flipping the console up vertically, making the laser access data from the opposite track. Although this proved a temporary solution, the opposite track too would burn out, which usually meant it had to be replaced. Several consumers were forced to buy multiple PlayStations to replace broken ones due to this problem. In the PlayStation 2 this particular problem seems to be solved, but fragile laser mechanisms still remain the main source of problems for Sony consoles. Sony Computer Entertainment provides full technical support for all problems of owners as long as the console has never been opened.

Specifications

Main CPU

MIPS R3000A-compatible (R3051) 32bit RISC chip running at 33.8688 MHz

The chip is manufactured by LSI Logic Corp. with technology licensed from SGI. The chip also contains the **Geometry Transformation Engine** and the **Data Decompression Engine**.

Features:

- Operating Performance of 30 MIPS
- Bus Bandwidth 132 Mbit/s
- Instruction Cache 4 kB
- Data Cache 1 kB (non associative, just 1024 bytes of mapped fast SRAM)

Geometry Transformation Engine

This engine is inside the main CPU chip. It gives it additional (vector-)math instructions used for the 3D graphics.

Features:

- Operating Performance of 66 MIPS
- 360,000 Flat-Shaded Polygons per second
- 180,000 texture mapped and light-sourced polygons per second

Sony originally gave the polygon count as:

- 4.5 billion flat-shaded polygons per second
- 500,000 texture mapped and light-sourced polygons per second

These figures were given as a ballpark figure for performance under optimal circumstances, and so are unrealistic under normal usage.

Data Decompression Engine

This engine is also inside the main CPU. It is responsible for decompressing images and video. Documented device mode is to read three RLE-encoded 16 × 16 macroblocks, run IDCT and assemble a single 16 × 16 RGB macroblock. Output data may be transferred directly to GPU via DMA. It is possible to overwrite IDCT matrix and some additional parameters, however MDEC internal instruction set was never documented.

Features:

- Compatible with MPEG-1 and H.261 files
- Operating Performance of 80 MIPS
- Directly connected to CPU Bus

Graphics Processing Unit

This chip is separate to the CPU and handles all the 2D Graphics processing, which includes the transformed 3D polygons.

Features:

- Maximum of 16.7 Million Colors
- Resolutions from 256 × 224 to 640 × 480
- Adjustable frame buffer
- Unlimited Colour Lookup Tables
- Maximum of 24 Bit Color Depth
- Maximum of 4000 8 × 8 pixel sprites with individual scaling and rotation
- Emulation of simultaneous backgrounds (for parallax scrolling)
- Flat or Gouraud shading, and texture mapping

Sound Processing Unit

Features:

- Can handle ADPCM sources with up to 24 channels and up to 44.1 kHz sampling rate
- Could perform digital effects including:
  - ○ Pitch Modulation
  - ○ Envelope
  - ○ Looping
  - ○ Digital Reverb
- Could handle up to 512 Mbit of sampled waveforms
- Supports MIDI instruments
- PC file name format: .PSF

Memory

Main RAM: 2 Megabytes (4 Megabytes on "Blue" development console)
Video RAM: 1 Megabyte
Sound RAM: 512 Kilobytes
CD-Rom Buffer: 32 Kilobytes
Operating System ROM: 512 Kilobytes
PlayStation Memory Cards have 128 Kilobytes of space in an EEPROM

CD-ROM Drive

Features:

- Originally Single Speed, later replaced with a Two Speed drive, with a maximum data throughput of 300 KB/s
- XA Mode 2 Compliant
- CD-DA (CD-Digital Audio)

See also

- PlayStation 2
- 32-bit era
- PlayStation 3
- PlayStation Portable
-

PlayStation 2

PlayStation 2

Manufacturer

Sony Computer Entertainment

Type

Video game console

Generation

Sixth generation era

First available

March 4, 2000

Media

DVD
CD

Online service

Game-supplied

Units sold

100 million (2005)

Top-selling game

Grand Theft Auto: San Andreas

The **PlayStation 2** (**PS2**) (Japanese: ×ì¤¹Æü·çó2) is Sony's second video game console, the successor to the PlayStation and the predecessor to the PlayStation 3. Its development was announced in March 1999, and it was first released in Japan on March 4, 2000 and in the North American market on October 26, 2000. It was released in Europe on November 24, 2000.

The PS2 is part of the sixth generation era, and has become the fastest selling gaming console in history, with over 100 million units shipped by November 2005, beating the previous record holder, the PlayStation, by three years and nine months.

History

The PlayStation 2 had a difficult start. Only a few million users had obtained consoles by the end of 2000 due to manufacturing delays. The PlayStation 2 was such a hot item after its release that it was near impossible to find one on retailer shelves, leaving those wanting a PlayStation 2 to either wait or purchase the console online at sites such as eBay, where the console was being sold by many people for twice and sometimes five times as much as the manufacturer's listed price. Developers also complained that it was difficult to develop for the system, with little in the way of reference material from Sony for its exotic architecture. The PS2 launch seemed unimpressive and gaffe-prone, compared to the well-planned launch of the Sega Dreamcast, which was making a genuine attempt to woo developers and which had better launch titles. Yet, the PS2 initially sold well solely on the basis of the strength of the PlayStation brand and its backwards compatibility, selling over 900,000 units in the first weekend in Japan. This allowed the PS2 to tap the large install base established by the PlayStation. Another major selling point over the Dreamcast was the PlayStation 2's ability to play DVDs, which gained it a presence in electronics stores which did not formerly sell video game consoles. Later, Sony gained steam with new development kits for game developers and more PlayStations for consumers.

Many analysts predicted a close 3-way matchup between the PS2 and its soon-to-be-released competitors Microsoft Xbox and Nintendo GameCube, noting that the PS2's graphics were inferior but that it had the advantage of a head start, and had a wide assortment of games of every genre (Xbox's strength was in its hardware; GameCube was the cheapest of the 3 consoles). However, the release of several blockbuster games during the 2001 holiday season pushed the PS2 far in front even as the Xbox and GameCube made their impressive debuts. Shortly afterwards, Sony also slashed PS2 prices greater than expected in order to maintain momentum and hold off its potential rivals

Although Sony placed little emphasis on online gaming during its first year, all that changed because of the launch of the online-capable Xbox. Not only did Sony roll out the PS2 online adapter in late 2002 to compete with Microsoft, several online launch games were first party titles such as SOCOM US Navy SEALS in order to show that Sony was supporting this feature actively. Sony also advertised heavily as well and its online model had the advantage of being supported by Electronic Arts. As a result, although Sony and Nintendo both started out late and although both followed a decentralized model of online gaming where the responsibility is up to the developer to provide the servers, Sony's efforts made PS2 online gaming a big success.

Hardware sales remained strong until 2004 saw the console apparently approaching saturation point, causing it to lose the top sales position for a time The heavy dependence of Sony on its Computer Entertainment division was shown when dropping PlayStation 2 sales caused the parent's profits to fall 89%. During that year, game sales fell to $7.5 billion from $8.2 billion. Its operating income slid to $650 million from $1 billion, losing $25 million in Q4 of 2004

In September of that year, in time for the launch of Grand Theft Auto: San Andreas (the best-selling game during the 2004 Holiday season), Sony revealed a new, smaller PS2 (see Hardware revisions). In preparation for the launch of a new, slimmer PlayStation 2 model (SCPH-70000), Sony had stopped making the older PS2 model (SCPH-5000x) sometime during the summer of 2004 to let the distribution channel empty out stock of the units. After an apparent manufacturing issue caused some initial slowdown in producing the new unit, Sony reportedly underestimated demand, caused in part by shortages between the time the old units were cleared out and the new units were ready. This led to further shortages, and the issue was compounded in Britain when a Russian oil tanker became stuck in the Suez Canal, blocking a ship from China carrying PS2s bound for the UK. During one week in November, sales in the entire country of Britain totalled 6,000 units — compared to 70,000 a few weeks prior. Shortages in North America were also extremely severe; one retail chain in the U.S., GameStop, had just 186 PS2 and Xbox units on hand across more than 1700 stores on the day before Christmas.

Sales Record

When the PlayStation 2 launched in Japan in March 2000, Sony sold 980,000 units over the opening weekend.

When the PlayStation 2 launched in America in October 26, 2000, Sony sold 510,000 units within the first 24 hours. With a price of $299.99 per console, Sony made gross sales of roughly $153,000,000. To this day, the PS2 holds the record for the most consoles sold in a single day as well as the record for most consoles sold in launch day in America. PS2's opening day console sales eclipsed the previous record of 225,000 made by the Sega Dreamcast in 1999.

The PlayStation 2 holds the record of fastest selling video game console ever, 100 million PlayStation 2 units were shipped in only five years and nine months, shattering the previous record of nine years and six months by the PlayStation.

Games

The PlayStation brand's strength has lead to strong third-party support for the system. Although the launch titles for the PS2 were unimpressive in 2000, the holiday season of 2001 saw the release of several best-selling and critically acclaimed games. Those PS2 titles helped the PS2 maintain and extend its lead in the video game console market, despite increased competition from the launches of the Microsoft Xbox and Nintendo GameCube. In several cases, Sony made exclusivity deals with publishers in order to pre-empt its competitors. Critically acclaimed games on the machine are the Grand Theft Auto and the ever-popular Final Fantasy (Square Enix) series, the latest two Metal Gear Solid titles, all three Devil May Cry titles, the SSX series, latest three Ace Combat titles, the Square Enix/Disney collaboration Kingdom Hearts, and first-party Sony Computer Entertainment brands such as the Gran Turismo, SOCOM, Ratchet & Clank and Jak and Daxter series, ICO, Shadow of the Colossus, God of War and the Everquest spin-offs Champions of Norrath and Champions: Return to Arms.

Hardware compatibility

The PS2 hardware can read both compact discs and DVDs. It is backwards compatible with older PlayStation (PS1) games, allows for DVD Video playback, and will play PS2 games off of cheap CD-ROMs or higher-capacity DVD-ROMs. The ability to play DVD movies allowed consumers to more easily justify the PS2's relatively high price tag (in October 2000, the MSRP was $300) as it removed the need to buy an external DVD player (indeed, it could be said that the success of the DVD format was partly due to the PS2's ability to play DVDs, as the format seemed to appeal more to consumers after the console's launch). The PS2 also supports PS1 memory cards (for PS1 game saves only) and controllers as well. The PS2's Dual Shock 2 controller is essentially an upgraded PS1 Dual Shock; analog face, shoulder and D-pad buttons replaced the digital buttons of the original.

When it was released, the PS2 had many advanced features that were not present in other contemporary video game consoles, including its DVD capabilities and USB and IEEE 1394 expansion ports. It was not until late 2001 that the Microsoft Xbox became the second console with (non-standard) USB and DVD support. (This is assuming the Nuon, an advanced DVD player graphics coprocessor, is not considered a console.) Even then, the Xbox required separate remote accessory to unlock the DVD function and Sony could continue to pitch the PS2 as DVD capable out of the box.

Trivia: Many devices with USB ports are incompatible with the Playstation 2, USB mass-storage devices aren't compatible even for uploading of ISO images of homebrew applications.

Software compatibility

Support for original PlayStation games was also an important selling point for the PS2, letting owners of an older system upgrade to the PlayStation 2 and keep their old software, and giving new users access to older games until a larger library was developed for the new system. As an added bonus, the PS2 had the ability to enhance PlayStation games by speeding up disc read time and/or adding texture smoothing to improve graphics. While the texture smoothing was universally effective (albeit with odd effects where transparent textures are used), faster disk reading could cause some games to fail to load or play correctly.

A handful of PlayStation titles (notably Metal Gear Solid: Special Missions) fail to run on the PS2 at all (Special Missions fails to recognise Metal Gear Solid at the disk swap screen, for example). This problem appears to have been rectified in the slimline versions of the PS2, where most of the previously unplayable PSone games can now be played. It is a common misconception that disk swapping in a game (for example, for multi-disk games or expansion packs) is not possible on the PS2. The anomalous failure of the above title at its disk swap screen may have given birth to this rumor. Software for all PlayStation consoles contains one of three region codes: for Japan and Asia: NTSC/J, North America: NTSC-U/C and Europe and Oceania: PAL.

Online play

With the purchase of a separate unit called the Network Adaptor (which is built into the newest system revision), some PS2 games support online multiplayer. Instead of having a unified, subscription-based online service like Xbox Live, online multiplayer on the PS2 is split between publishers and run on third-party servers. However, this comes at a price as any connection can connect to the internet with a PS2, resulting in lag whenever slow connections are present. Most recent PS2 online games have been developed to exclusively only support broadband internet access. Xbox Live exclusively requires broadband internet.

All newer online PS2 games (since 2003) are protected by the Dynamic Network Authentication System (DNAS). The purpose of this system is to prevent piracy and online cheating. DNAS will prevent games from being played online if they are determined to be pirated copies, or if they have been modified.

Home development

Sony released a version of the Linux operating system for the PS2 in a package that also includes a keyboard, mouse, Ethernet adapter and hard disk drive. Currently, Sony's online store states that the Linux kit is no longer for sale in North America. However as of July 2005, the European version was still available. (The kit boots by installing a proprietary interface, the Run-time environment which is on a region-coded DVD, so the European and USA kits each only work with a PS2 from that region).

In Europe and Australia, the PlayStation 2 comes with a free Yabasic interpreter on the bundled demo disk. This allows simple programs to be created for the PlayStation 2 by the end-user. This was included in a failed attempt to circumvent a UK tax by defining the console as a "computer" if it contained certain software.

A port of the NetBSD project is also available for the PS2.

It is also possible to listen to MP3 music and watch DivX movies with homebrew programs running in consoles that have a modchip installed.

Hardware revisions

The PlayStation 2 has undergone many revisions, some only of internal construction and others with substantial external changes. These are colloquially known amongst PlayStation 2 hardware hackers as V0, V1, V2, etc., up to V14 (as of 2005).

V0 was a Japanese model and was never sold in Europe or the US. These included a PCMCIA slot instead of the Expansion Bay (DEV9) port of newer models. V0 did not have a built-in DVD player and instead relied on an encrypted player that was copied to a memory card from an included CD-ROM (normally, the PS2 will only execute encrypted software from its memory card, but see PS2 Independence Exploit). V3 has a substantially different internal structure from the subsequent revisions, featuring several interconnected printed circuit boards. As of V4 everything was unified into one board, except the power supply. V5 introduces minor internal changes and the only difference between V6 (sometimes called V5.1) and V5 is the orientation of the Power/Reset switch board connector, which was reversed to prevent the use of no-solder modchips. V7 and V8 are also similar, and V9 (model number SCPH-50000/SCPH-50001) added the Infrared port for the optional DVD Remote Control, removed the widely unused FireWire port, added the capability to read DVD-RW discs, and a quieter fan. V10 and V11 have minor changes.

In September 2004 Sony unveiled the third major hardware revision (V12, model number SCPH-70000). Available in November 2004, it is smaller and thinner than the old version and includes a built-in Ethernet port. In some markets it also integrates a modem. Due to its thinner profile, it does not contain the 3.5" expansion bay, and therefore does not support the internal hard disk drive but due to the presence of USB 2.0 ports an external USB Hard disk can still be used, and now uses an external power supply, like the Gamecube. Although external USB 2.0 enclosures are affordable the lack of internal hard disk has implicated a problem for users with perhaps little knowledge of the software required to enable the external disk functionality. For some consumers this is in fact a limitation, especially for the fans of titles such as Final Fantasy XI, which requires the use of this peripheral, and prevents the use of the official PS2 Linux kit. A product named HD Connect can be soldered into the unit giving hard drive support though. It is widely believed that Sony has abandoned support for the hard drive. There are also some disputes on the numbering for this PS2 version, since there are actually two sub-versions of the SCPH-70000. One of them includes the old EE and GS chips, and the other contains the newer unified EE+GS chip, otherwise being identical. Since the V12 version had already been established for this model, there were some disputes regarding these sub-versions. Two propositions were to name the old model (EE and GS, separate chips) V11.5 and the newer model V12, and to name the old model V12 and the newer model V13. Currently, most people just use V12 for both models, or V12 for the old model and V13 for the newer one. The new V12 model was first released in black. A silver edition is available in the United Kingdom and Germany exclusively. It is unknown whether or not this will follow the color schemes of the older model.

There is also now a V14 model (SCPH-75001) which contains an integrated EE and GS (disputed — see talk page), and different ASICs compared to previous revisions, some chips having a copyright date of 2005 compared to 2000,2001 for earlier models. It also has a different lens and some compatibility issues documented by Sony for earlier PS2 games.

Sony has also made a PVR/DVD burning consumer device that plays PlayStation 2 games called the PSX. The device was poorly received, with some major features absent from the first revisions of the hardware, and has thus far experienced very weak sales in Japan, in spite of major price drops. The machine's future continues to be uncertain, with North American and European launches considered to be distant if at all.

Later hardware revisions had better compatibility with PlayStation games (*Metal Gear Solid: VR Missions* works on most silver models). However, the new Japanese slim models have more issues with playing PlayStation games than the first PS2 revisions.

Accessories

The PS2's controller is largely identical to the PlayStation's, with the same basic functionality; however, it includes analog pressure sensitivity on the face and shoulder buttons, is lighter and includes two more levels of vibration. The fact that the design didn't change pleased some consumers who were already used to the PS1 controller, however, it disappointed others who were hoping for a more ergonomic design (the two analogue sticks being as they are in an awkward-to-use position for the thumbs to operate).

Optional hardware include additional controllers, a DVD remote control, a hard drive, a combination modem and Ethernet adapter, memory cards, and various cables and interconnects: Multitaps, Component video, S-Video, VHF antenna video cables, webcam (AKA "Eyetoy"), Keyboard, Mouse and Headset.

Technical Issues

Disc Read Error

Owners of early PS2 models purchased from launch until spring 2002 commonly reported faulty optical drives in their consoles. The earliest drives suffered from a constantly misaligning laser lens but later defects were the result of a shift in voltage to the laser itself. The first problem was relatively easy to remedy, but it required opening the machine's casing and tweaking a cog that controlled the lens' distance from the discs it was supposed to read, thus voiding the warranty. This usually didn't matter, as the warranty had already expired by the time such problems began to appear. The second fix involved the use of an oscillator. As time went on, more and more drives began breaking down and a class action lawsuit was filed against Sony. They had the option of either paying the requested fines in damages, or offering free repair and replacements at their discretion. [11] Sony chose the latter and, until February 2005, they honored their agreement.

A second lawsuit is being filed against Sony for all of the above, plus claims that defective hardware is damaging media discs. The first hearings are set to commence in April and May, 2006.

Modchips

The PlayStation 2, like the original PlayStation, incorporates circuitry to prevent the playing of copied or out-of-region discs. In response to this, a thriving "underground" grey market exists, selling modchips. These devices, when installed, bypass the checks and allow the discs to run.

The installation of modchips in PlayStation 2 consoles is widely discouraged by Sony and many user groups and technicians. The obvious reason is piracy, but the chips also have several other drawbacks as well. Many of these chips work on a different voltage than the console, risking damage to the unit. The use of DVD-R and pressed discs (pirated copies) such as ripped CD games can also damage the laser drive. Even so-called Swap Magic processes have the potential to damage the system.

Because of the existence of these hazards, Sony has overlaid a seal onto each of their consoles. If this seal is broken (thus providing evidence that the console has been opened and "modded"), Sony will refuse to repair the system.

However, in Australia, the court has ruled that using a modchip to play legally purchased game from another region is legal, thus making the modchip legal in Australia

Technical specifications

The specifications of the PlayStation 2 console are as follows, with hardware revisions:

- CPU: 128 bit "Emotion Engine" clocked at 294 MHz (later

versions 299 MHz), 10.5 million transistors
  - System Memory: 32 MB Direct Rambus or RDRAM (note that some computers use this type of RAM)
  - Memory Bus Bandwidth: 3.2 GB per second
  - Main processor: MIPS R5900 CPU core, 64 bit
  - Co-Processor: FPU (Floating Point Multiply Accumulator × 1, Floating Point Divider × 1)
  - Vector Units: VU0 and VU1 (Floating Point Multiply Accumulator × 9, Floating Point Divider × 1), 128 bit
  - Floating Point Performance: 6.2 GFLOPS
  - 3D CG Geometric Transformation: 66 million polygons per second (1)
  - Compressed Image Decoder: MPEG-2
  - I/O Processor interconnection: Remote Procedure Call over a serial link, DMA controller for bulk transfer
  - Cache Memory: Instruction: 16KB, Data: 8KB + 16 KB (ScrP)
- Graphics: "Graphics Synthesizer" clocked at 147 MHz
  - DRAM Bus bandwidth: 47.0GB per second
  - DRAM Bus width: 2560-bit
  - Pixel Configuration: RGB:Alpha:Z Buffer (24:8, 15:1 for RGB, 16, 24, or 32-bit Z buffer)
  - Maximum Polygon Rate: 75 million polygons per second (1)
  - Dedicated connection to: Main CPU and VU1
- Sound: "SPU1+SPU2"
  - Number of voices: 48 hardware channels of ADPCM on SPU2 plus software-mixed channels
  - Sampling Frequency: 44.1 kHz or 48 kHz (selectable)
- I/O Processor
  - CPU Core: Original PlayStation CPU (MIPS R3000A clocked at 33.8 MHz or 37.5 MHz)
  - Sub Bus: 32 Bit
  - Connection to: SPU and CD/DVD controller.
  - Interface Types: 2 proprietary PlayStation controller ports, 2 proprietary Memory Card slots using MagicGate encryption, Expansion Bay (DEV9 or PCMCIA on early models) port for Network Adaptor, Modem and Hard Disk Drive, IEEE 1394 (2), Infrared remote control port (2), and 2 USB 1.1 ports with an OHCI-compatible controller.

- Disc Media: DVD-ROM (CD-ROM compatible) with copy protection. 4.7GB capacity, a few are DVD-9 (8.5 GB)

(1) Polygons per second under ideal circumstances (e.g. no

texturing, lighting, or vertex colors applied). Some criticize these figures for being unrealistic, and not indicative of real-world performance. The true polygons per second figure with full textures, effects etc. is around 7 million.

(2) IEEE 1394 removed in SCPH-50000 and later hardware versions, and Infrared remote port added.

See also

- PlayStation
- PlayStation 3
- PlayStation Portable
-

Home | Up

PlayStation 3

PlayStation 3

Manufacturer

Sony Computer Entertainment

Type

Video game console

Generation

Seventh generation era

First available

2006 [1]

Media

Blu-ray Disc, DVD, CD

The **PlayStation 3** (**PS3**) (Japanese: ×ì¤¹Æü·çó3) is Sony's seventh generation era video game console in the market-leading PlayStation series. The PlayStation 3 is slated for release in 2006[2]. Specifically, Sony representatives have informed video game store clerks to expect a North American shipment in Summer 2006, more narrowly defined as "somewhere between June and September." It is the successor to the PlayStation 2 and will mainly compete against the Nintendo Revolution and Xbox 360. Sony has announced that the PS3 will be backward compatible with earlier PS1 and PS2 games. At the moment, little more is known in public about the PS3 apart from its hardware specifications and reports that it will be based on open APIs for game development.

History

The PS3 was officially unveiled on May 16, 2005 by Sony during the E^3 conference, where the console was first shown to the public. A functional version of the console was not at E^3 or the Tokyo Game Show in September 2005, although some demonstrations were held on devkits and videos of soon-to-be released games created to run on systems with the same specs as the PS3 were presented, such as Metal Gear Solid and Killzone 3.

Cost and release date

Actual cost and release date may be announced by Sony at the DevStation Conference[3] in London March 1-2.

The system's retail price is not known.[4][5] Sony Computer Entertainment president and "father of the PlayStation" Ken Kutaragi points out "It'll be expensive" and "I'm aware that with all these technologies, the PS3 can't be offered at a price that's targeted towards households. I think everyone can still buy it if they wanted to," said Kutaragi to a mostly Japanese crowd. "But we're aiming for consumers throughout the world. So we're going to have to do our best [in containing the price]". In contrast Kazuo Hirai, president of Sony Computer Entertainment America, says the PS3 will not be expensive and that it will be competitively priced against the Xbox 360.[6]

In the same magazine, Ken Kutaragi was interviewed, and expressed little concern over the PS3's possibly high launch price, believing that customers would be willing to pay extra for a superior product, as they had in the past for the original PlayStation (¥39,800 vs. 12,500 for the Super Famicom).

Sony office press releases indicate a 2006[7] launch. Sony Blu-Ray standalone players are to be released early summer[8]. It is likely that standalone players will be released prior to PS3.

Manufacturing Costs

Merrill Lynch Japan estimates the PS3 manufacturing costs at 54,000 yen (U.S. $471), and its selling price at $399[9]. For the consumer this means one should be able to buy a PlayStation 3 at a lower price than its actual manufacturing cost. Although manufacturing costs for Blu-Ray and the cell are unknown, it is safe to say like all new systems, they will lose money from the first year. The nature of pricing a video game system is to sell as many games possible.

Hardware specifications

A simple comparison of the system architectures appears to indicate that the floating point capability of the PS3 is better than that of the Xbox 360. This comparison is based on the combined floating point capacity of the Cell microprocessor and the RSX GPU in the PS3 compared to the combined capacity of the Xenon CPU and Xenos GPU in the Xbox 360. The amount of completely programmable floating point capacity afforded by the Cell microprocessor for general-purpose tasks, like procedural content generation and game physics, is higher than the Xbox 360's CPU, while the floating-point performance of the two systems' GPUs, which are designed specifically for graphics rendering tasks, are somewhat closer to parity. These comparisons are based on estimates of theoretical maximum performance. Real-world performance for both systems will naturally be less, and the specifications of the PS3 may undergo major changes before the system is launched. Please see the section entitled overall floating-point capability for more details on this.

According to a press release by Sony at the May 16, 2005 E3 Conference, the specifications of the PlayStation 3 are as follows. [10]

Central processing unit

3.2 GHz Cell processor:

- 1 PPE core (PowerPC-derived)
    - 32 KB L1 cache
    - 512 KB L2 cache

  - A VMX vector unit with 32x128bit vector registers (IBM's branding for AltiVec)
  - Two hardware threads
- 7 used SPEs (Synergistic Processing Elements) vector processing cores
  - 256 KB SRAM local memory for each SPE
  - 128 × 128-bit SIMD general purpose register files
  - 4 Integer units
  - 4 Floating point units
  - 25.6 GFLOPS (billion floating point operations per second)
  - 25.6 GOPS (billion integer operations per second)
- 218 GFLOPS theoretical (billion floating point operations per second)
- 218 GOPS total (billion integer operations per second)
- 25.2 billion shader operations per second (100 billion with GPU)
- 234 million transistors [11]
- 213 million available transistors due to the one disabled SPE [12] [13]
- 2.3 MB SRAM total (512 KB L2 cache and 1.79 MB SPE local memory)

Each chip includes 8 SPEs, but one is most likely disabled to improve yields and reduce costs

Graphics processing unit

Custom "RSX" or "Reality Synthesizer" design co-developed by NVIDIA and Sony:

- Clocked at 550 MHz
- 1.8 TFLOPS (trillion floating point operations per second)
- Full high definition output (up to 1080p) x 2 channels
- Multi-way programmable parallel floating point shader pipelines
- 136 shader operations per clock
- 74.8 billion shader operations per second (100 billion with CPU)
- 33 billion dot products per second (51 billion dot products with CPU)
- 128-bit pixel precision offers rendering of scenes with high dynamic range imaging

NVidia CEO Jen-Hsun Huang stated during Sony's pre-show press conference at E3 2005 that the RSX will be more powerful than two

GeForce 6800 Ultra video cards combined. Nvidia has stated that the RSX will have a lot in common with the G70 architecture used in NVidia's GeForce 7 Series GPUs which were introduced in June of 2005, and since the G70 is also capable of carrying out 136 shader operations per clock, the RSX is expected to feature the same number of parallel pixel and vertex shader pipelines as the G70 (NVidia's top-of-the-line GeForce 7800 GTX 512 currently contains 24 pixel and 8 vertex pipelines), and clocked similarly to Nvidia's highest end PC GPU based on G70 (with speculation that the RSX chip will be reworked using the new G71 architecture topping 650-700 MHz) (again, the 7800 GTX 512 is clocked at 550 MHz, which is equivalent to the 550 MHz announced for the RSX). This places both the 7800 GTX 512 and the RSX at approximately 28% faster than the 256 MB 7800 GTX. An nVidia spokesperson was quoted in *PlayStation Magazine* as saying that the 7800GTX "shares a lot of similar inner workings with the PS3's RSX chip, only it *(the 7800GTX)* isn't nearly as fast (as the RSX)."

Memory

256 MiB Rambus XDR DRAM clocked at CPU die speed (3.2 GHz)
256 MiB GDDR3 VRAM clocked at 700 MHz

Theoretical system bandwidth

- 25.6 GB/s GPU to XDR DRAM: 64 bits × 3.2 GHz
- 22.4 GB/s GPU to GDDR-3 VRAM: 128 bits × 700 MHz × 2 accesses per clock cycle (one per edge)
- 35 GB/s GPU to CPU (Aggregated 20 GB/s (write), 15 GB/s (read))
- 5 GB/s System Bus (Aggregated 2.5 GB/s upstream and downstream)
- 300 GB/s Cell EIB
- 76.8 GB/s Cell FlexIO Bus (44.8 GB/s outbound, 32 GB/s inbound)

Since the RSX is connected to the XDR DRAM and GDDR3 RAM similar to a Turbo Cached GPU it can access both memory locations at the exact same time. This gives the RSX an effective 48GB/s when sending data to/from GPU and RAM.

Overall floating-point capability

In a slide show at their E3 conference, Sony presented the "CPU floating point capability" of the PlayStation 3's Cell CPU, and compared it to other CPUs. The presentation shows that one PS3 Cell CPU alone is capable of 218 GFLOPS, compared to the Xbox 360's Xenon CPU's 115 GFLOPS. In their official press release, the same statistic regarding the PS3 as a whole was reported to be over 2.1 TFLOPS. The figures are likely rounded estimations. It was unclear how these numbers were exactly calculated, possibly based on addition of the floating point capabilities of the processing units in the Cell CPU and those of the RSX GPU. The performance statistics given for the PS3 and XBox 360 in Sony's presentation were based on the theoretical maximum performance of the systems. Inevitably, real-world performance for both systems will be lower. Additionally, programmers may find it difficult, initially, to optimize their game engines to make the best use of the highly parallel architectures of both systems, further reducing real-world performance.

According to an in-depth report compiled by IBM, the theoretical peak performance of a single SPE is 25.6 GFLOPS. The seven SPEs in the PS3, in addition to the VMX unit in the PPE, would yield a total combined single-precision floating point performance of 218 GFLOPS (the same figure quoted by Sony). It should be noted that this figure is an estimate based on absolutely ideal, 100% efficient operation of the processor. In real-world applications, IBM expects that the Cell will achieve about 75.9% of its maximum performance (or roughly 165 GFLOPS). It is still expected that the floating-point capacity of the PS3 will significantly exceed that of the XBox 360, although it should be noted that Microsoft's console, due to its 3 symmetric fully featured processor cores (which are very similar to the Cell's PPE), may fare better on dynamically branching code, like that used for artificial intelligence.

Please note that all the above figures are based on the theoretical performance of components which *may change considerably before product launch*. Also, real-world performance *WILL be less* than the theoretical maximum. Finally, whether *the PS3's advantage in floating-point performance will be readily apparent* in games depends entirely on whether developers are able to effectively make use of the system's unique architecture.

It should also be noted that floating-point performance is a single-dimensional metric for comparing computers, and that many other considerations (including integer performance, memory size and bandwidth, etc.) determine the "overall" performance of a computer system. Floating point calculations are very important for graphics, multimedia, and game physics, but considerably less important for other tasks like artificial intelligence.

Audio/video output

Supported screen sizes: 480i, 480p, 720p, 1080i, 1080p
Two HDMI (Type A) outputs (Dual-screen HD outputs)
Optical digital audio output
Multiple analog outputs (Composite, S-Video, Component video)

Sound

Dolby Digital 5.1, DTS, LPCM (DSP functionality handled by the Cell processor)

Storage

Blu-ray Disc: PlayStation 3 BD-ROM, BD-Video, BD-ROM, BD-R, BD-RE, BD-RW.
DVD: PlayStation 2 DVD-ROM, PlayStation 3 DVD-ROM, DVD-Video, DVD-ROM, DVD-R, DVD-RW, DVD+R, DVD+RW
CD: PlayStation CD-ROM, PlayStation 2 CD-ROM, CD-DA, CD-DA (ROM), CD-R, CD-RW, SACD, SACD Hybrid (CD layer) SACD HD
Detachable 2.5" hard drive with Linux pre-installed. Optional but not required for most games.
Memory Stick standard/Duo and standard/mini slots
CompactFlash Type I and II slot
SD/MMC slot for mp3s, ogg vorbis, nokia music, and aacs

Physical dimensions

- 32 cm (L) x 24 cm (W) x 8 cm (H)[14]

Communications

Three Gigabit Ethernet ports (Sony has indicated that because of cost reduction there is a possibility that the PlayStation 3 may act only as an accessory interface and hub and perhaps not as a router, as originally planned.)[15]
IEEE 802.11g Wi-Fi
Bluetooth 2.0
USB 2.0 (four front and two rear ports)

Controller

SCEI's press release indicates that controller connectivity to the PlayStation 3 can be provided via:

802.11g Wi-Fi. Integrated for mesh networking and connectivity with the PlayStation Portable
TCP/IP networking (wired ethernet)
USB 2.0 (wired)
Bluetooth 2.0 (up to 7 controllers)

The design of the controller has been likened to a boomerang or a banana by many observers (or even less flattering likenesses). However, some suggest that the controller, while a little un-traditional in contrast to the DualShock and DualShock 2 controllers, might provide adequate comfort for extended hours of play. According to the Japanese video game publication Famitsu, Sony Computer Entertainment chief technical officer Masayuki Chatani said that the controller design is a "prototype, so there could be some small adjustments."

[16] In an interview with *Edge*, SCEE's Chris Deering echoed these statements by describing the E3 controller as "just a design study". Some people pointed that the controller bears a similar resemblance to the old Alps Interactive 3rd party controller which was originally made for the PlayStation.

Unconfirmed reports suggest that the PS3 may in fact support the older DualShock 2 controllers, however, this is thought to be true due to the Playstation 3 striving to attain backwards compatibility. The number of ports to support such backward compatibility would most likely be limited to one, although this is also an unconfirmed rumour. The PS3's specifications, and E3 display units, don't support DualShock controller ports. Though Sony itself had previously admitted at this past E3 that the controller design for their PlayStation 3 console was not finalized, GameSpot believes any purported changes will not be substantial. They downplay a new rumor suggesting Sony will unveil a revamped PS3 controller at the Consumer Electronics Show in January 2006.

Miscellaneous

The ability for the PlayStation Portable to connect to the PlayStation 3 as a video-enabled controller.
Two simultaneous High-definition television streams for use on a title screen for a HD Blu-ray Movie.
High-definition IP video conferencing.
EyeToy interactive reality game.
EyeToy voice command recognition.
EyeToy virtual object manipulation.

Digital photograph display (JPEG).
MP3 and ATRAC download and playback.
Simultaneous World Wide Web access and gameplay.
Hub/Home Ethernet Gaming Network.
Parental Controls

Games in development

As of October 2005, there are already over 150 PS3 games announced by multiple developers and publishers, like SCEA, Electronic Arts, Konami, Namco, Capcom, Square Enix and many others. The actual number in development, though undeniably fewer, should still be very high.

Most developers have already announced games for the PS3. Some anticipated ones include Metal Gear Solid 4: Guns of the Patriots, Resident Evil 5, Devil May Cry 4, Shin Megami Tensei, Armored Core 4 , Unreal Tournament 2007 and Tekken 6. In the E3 2005 Press Conference, Sony showed some pre-rendered and some real-time videos of games in development with the codenames Eyedentify, Vision Gran Turismo and MotorStorm. Also shown at E3 was a video of Final Fantasy VII 's opening sequence remade in PlayStation 3 graphics, at the time recent to the show, Square Enix stated no plans for a remake. Square Enix is however listed for a Final Fantasy game along with 70 other Japanese developers during TGS 2005. Since they aren't working on a remake then this will most likely be Final Fantasy XIII. Controversial games developers Rockstar North have also hinted that they are planning the provisionally named Grand Theft Auto 4, primarily for the PS3. One of the most, if not the most anticipated PS3 game up to this point is Metal Gear Solid 4: Guns of the Patriots, which had its first trailer shown at the Tokyo Game Show 2005 event. At this time, only three games have been mentioned as PS3 launch titles: Lair from Factor 5 Warhawk from Incognito Entertainment, and Unreal Tournament 2007 from Epic Games. In the November issue of PSM Magazine, SCEA Chief Operating Officer Jack Tretton mentioned both Lair and Warhawk as launch titles, although Sony would not expand further on his comments. In the January issue of the same publication, it was stated that Epic Games is working hard to get Unreal Tournament 2007 ready for the proposed launch in Spring 2006. However, Epic stated in response that they are working to release the PC version first and that the PS3 version has no priority for release over the PC version.

Software development kit

Sony has selected several technologies and arranged several sublicensing agreements to create the software development kit for developers. The PlayStation 3, unlike the PlayStation and PlayStation 2 systems, is based on publicly-available application programming interfaces.

The list of open standards includes:

COLLADA, an open, XML-based file format for 3D models.
OpenGL ES 2.0, the embedded version of the popular OpenGL graphics API.
OpenMAX, a collection of fast, cross-platform tools for general "media acceleration," such as matrix calculations.
OpenVG, for hardware-accelerated 2D vector graphics.

Sublicensed technologies includes:

Ageia's PhysX SDK, NovodeX.
Epic's Unreal engine 3.0 framework.
Havok's physics and animation engines.
Pixelux's Game Asset Synthesis Technology [18], a toolkit for advanced procedural synthesis
Alias Systems Corporation's 3D graphics programs [19]
Cg, Nvidia's C-like shading language.
SpeedTree RT, a programming package produced by Interactive Data Visualization, Inc. that aims to produce high-quality virtual foliage in real time.

The list of standards they are reported to be considering includes:

- IPv6, the next generation of the Internet Protocol. [20]

In addition, Sony recently purchased SN Systems, a former provider of Microsoft Windows based development tools for a variety of console platforms including the PlayStation 2, GameCube, PSP and Nintendo DS to create additional Linux development tools. Sony is providing developers with Linux toolchains where SN Systems will provide more customer-oriented Linux tools at an additional cost.

GNU/Linux

Ken Kutaragi confirmed that the PlayStation 3 will come with GNU/Linux as its operating system. [21]

IBM had quickly sent a series of improvements to the Linux developers mailing-list regarding the Cell processor, and has publicly presented a Cell based server running Linux kernel 2.6.12. [22] Since then IBM has begun to offer detailed information and tutorials for software development on Cell based systems including the PlayStation 3. [23]

Online services

Sony has recently revealed that the online service for the PlayStation 3 will use the same non-unified architecture as that of the PlayStation 2. In the latest issue of the *Official PlayStation Magazine*, Sony denied rumors that it would be implementing a centralized online service similar to Microsoft's Xbox Live. Instead, online services for PS3 games will be decentralized and left up to individual game publishers. While this will give games publishers greater freedom in terms of what they are able to offer online, some say it may make it more difficult for Sony to control the quality of the online experience.

Decentralized online services means that there will be differant useface for each game depending on the developer however not necessarily multiple accounts to access online games via the PS3 service, however they will have the advantage of being able to choose which games or services they actually want.

Sony have yet to disclose to the public their plans for the PlayStation 3 online experience. The above should be regarded as speculative commentary, the basis of which is (reasonably well informed) discussion in the gaming press. It may well be the case that the PSP provides some sort of insight into exactly what sort of online experience Sony will be offering in 2006.

Region Coding

PlayStation 3 games are unlikely to be region coded, according to Sony's Australian managing director, Michael Ephraim.

Unlike its predecessors, the PlayStation and the PlayStation 2, the PS3 is tipped to allow gaming and movie playback from downloads or discs bought in any part of the world, rather than being limited to playing discs only from a specific region. The PS3's support for HDTV standards was cited as one of the key reasons the company has stopped the practice of region coding.

According to Ephraim, "If you look at the fact that [the PlayStation 3] will support high-definition TV, which will be a global standard, there's a good likelihood that it will be global region, as for example we've done with the PSP [PlayStation Portable]."

Sony's decision to stop region coding means consumers will be able to purchase PS3 games from anywhere in the world, which may turn out to be significantly cheaper than purchasing them exclusively from their home territory, or importing the system from Japan on launch.

Blu-Ray movies played on the PS3 will use a region code. The Blu-Ray region code will be different from DVD region code.

Region code	Area
1	United States, Canada, Mexico, South America, Japan and East Asia (excluding China)
2	Europe and Africa
3	China, Russia, and all other countries.

Backwards compatibility

Games

The PlayStation 3 will be compatible "*on the chip*" with PlayStation 2 and PlayStation games, without emulation. It still isn't known how Sony has achieved this (although Sony had developed a single-chip PS2 CPU/GPU solution, used in newer revisions of the "slim" PS2). Compatibility with PS2 online games and games designed for the hard drive support hasn't been elaborated upon. In a recent interview Ken Kutaragi stated that backwards compatibility will be achieved through a combination of hardware and software.

"Third-party developers sometimes do things that are unimaginable. For example, there are cases where their games run, but not according to the console's specifications. There are times when games pass through our tests, but are written in ways that make us say, 'What in the world is this code?!' We need to support backward compatibility towards those kinds of games as well, so trying to create compatibility by software alone is difficult. There are things that will be required by hardware. However, with the powers of [a machine like] the PS3, some parts can be handled by hardware, and some parts by software."

Peripherals

The PS3 will not be backwards compatible with some of the hardware peripherals of the PS2. For example, memory cards for PlayStation and PlayStation 2 will not work on the PlayStation 3 hardware. Instead it was announced that the PS3 will use the Sony memory stick to save games. This means that the PS3 will not be able to use PS1 and PS2 memory cards; however, this will allow gamers to trade saved games over the Internet more easily.

Side Note

The logo of the PlayStation 3 is in the same font as the logo of the Spider Man motion pictures.

Spider-Man 2 scenes were used in the E3 2005 Sony Press Conference demonstrating the console's capabilities.

See also

- PlayStation
- PlayStation 2
- PlayStation Portable

References

1. ^ "Sony CES: Playstation 3 available in 2006," *Sony*, January 4.
2. ^ "PlayStation 3 price - $500?," *CNN Money*, Jan 11 2006.
3. ^ "Report: PS3 to sell for $399, cost $494 to make," GameSpot, June 30, 2005.
4. ^ "Sony CES: Press Release," *Sony*, January 5.
5. ^ "Q&A: Sony video game exec predicts PS3 will prevail," Seattle Post-Intelligencer, May 19, 2005.
6. ^ "Sony Considers Linux for PS3 Hard Disk," ign, June 9, 2005.
7. ^ "IBM Discloses Cell Based Blade Server Board Prototype," Nikkei, May 25, 2005.
8. ^ "Cell Broadband Engine Resource Center," IBM, June 25, 2005.
9. ^ *Juniper Networks on IPv6 and MPLS networking in Asia – Part I. DigiTimes Publication. URL accessed on June 10, 2005.*
10. ^ *Sony Computer Entertainment Inc. to launch its next generation computer entertainment system. Sony Computer Entertainment Inc.. URL accessed on June 10, 2005.*
11. ^ *Open sourcing of Cell coming to fruition. IT Manager's Journal. URL accessed on June 10, 2005.*
12. ^ *Kutaragi talks more on PlayStation 3. GameSpot. URL accessed on June 20, 2005.*
13. ^ *Introducing the IBM/Sony/Toshiba Cell Processor — Part I: the SIMD processing units. Arstechnica. URL accessed on 7 February 2005.*

14. ^ “From Xbox to Xbox 360, from PS2 to PS3,” Nikkei Business Publications, Inc., June 20, 2005.
15. ^ “Sony Undecided on Hard Disk,” IGN, June 1, 2005.
16. ^ “Router functions dropped from PS3 spec,” GamesIndustry.biz, July 11, 2005.

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Sega Dreamcast

Sega Dreamcast

Manufacturer

Sega

Type

Video game console

Generation

Sixth generation era

First available

November 27, 1998

Media

GD-ROM

Online service

SegaNet, DreamArena

Units sold

10 million (2001)

Top-selling game

Sonic Adventure

The **Sega Dreamcast** (Japanese: Éêüàã¹È; code-named "Blackbelt", "Dural" and "Katana" during development) was Sega's last video game console. An attempt to recapture the console market with a next-generation system, it was designed to supersede Sony's PlayStation and Nintendo's N64, and although generally considered to be "ahead of its time", it failed to gather enough momentum before the release of the PlayStation 2 a year later. After the Dreamcast was discontinued, Sega withdrew from the console hardware business.

History

When the time came to design the successor to the Sega Saturn, the new President of Sega, Shoichiro Irimajiri, took the unusual step of hiring an outsider. He hired Tatsuo Yamamoto from IBM Austin to head a skunkworks group to develop the next-generation console. However, it soon became apparent that the existing Japanese hardware group led by Hideki Sato did not want to relinquish control of hardware, and so there were two competing designs led by two different groups.

Design

The Japanese group led by Hideki Sato settled on an SH4 processor with a PowerVR graphics processor developed by VideoLogic which was later bought by NEC. This was originally codenamed "White Belt". The first Japanese prototype boards were silkscreened "Guppy" and the later ones "Katana".

The US skunkworks group (in a secret suite at the 303 Twin Dolphin Drive building) led by Tatsuo Yamamoto settled on an SH4 processor with a 3Dfx Voodoo 2 graphics processor, which was originally codenamed "Black Belt". The first US prototype boards were silkscreened "Shark" (in response to the Japanese "Guppy") and the later ones "Dural".

Contrary to popular misinformation, the Japanese hardware was never codenamed "Dural". This codename was only used by the US group, and in fact, the US hardware team called themselves the "Dural team".

In July 1997, it was decided that the Japanese "Katana" would be the chosen format, renamed Dreamcast. In September 1997, 3Dfx filed a lawsuit against Sega and NEC (later including VideoLogic), claiming "breach of contract", although they later settled. [1] A timeline of the development of the console's GPU may be found here.

Launch

The Dreamcast was released on November 27, 1998 in Japan, on September 9, 1999 in the United States (the date 9/9/99 featured heavily in US promotion) and on October 14, 1999 in Europe. The tagline used to promote the console in the US was "It's thinking", and in Europe "Up to 6 Billion Players". (The vagueness of these campaigns and almost total lack of any in game footage has been touted as one of the reasons for the Dreamcast's eventual downfall. Many Americans knew that the Dreamcast was coming, but didn't know what one was.) The Dreamcast was the first console to include a built-in modem and Internet support for online gaming. It enjoyed brisk sales in its first season and was one of Sega's most successful hardware units. In the United States alone, a record 200,000 units had been pre-ordered before launch and Sega sold 500,000 consoles in just two weeks (including 225,000 sold on the first 24 hours which became a video game record until the PlayStation 2 launched a year later). In fact, due to brisk sales and hardware shortages, Sega was unable to fulfill all of the advance orders. Sega confirmed that it made $98.4 million on combined hardware and software sales with the Dreamcast with its September 9, 1999 launch. Sega even compared the record figure to the opening day gross of *Star Wars Episode I: The Phantom Menace*, which made $28.5 million during the first 24 hours in theaters.

Before the launch in the United States, Sega had already taken the extra step in displaying Dreamcast's capabilities in stores nationwide. Much like the PlayStation's launch in North America, the displays of titles such as Soul Calibur, Sonic Adventure, Power Stone and Hydro Thunder helped the Dreamcast succeed in the first year. Although Electronic Arts declined to support the Dreamcast which included the omission of its popular sports games (due in part to EA's losses from the past Sega Saturn), Sega Sports titles helped to fill that void.

Competition

In April 1999, Sony announced its PlayStation 2, designed to be backwards-compatible with the older PlayStation, and released the unit in Japan in March 2000. Sony's press release, despite being a year ahead of the launch of the PS2, was enough to divert a lot of attention from Sega. Even though Sega touted the Dreamcast's online capabilities (the PS2 would not go online until late 2002), much public attention was focused upon the PlayStation 2's ability to play DVDs due to the fact that the PS2 was much cheaper than many of the DVD players available at the time and due to the growing size of the DVD movie market. Electronic Arts also threw its support to the PS2 and their titles helped to negate an otherwise unimpressive PS2 launch. As a result of these three developments, the Dreamcast began to lose momentum as gamers waited to see which console would come out on top.

In 2000, the announcement of the Microsoft Xbox and Nintendo GameCube was widely regarded as the last straw for the Dreamcast, since both competitors had deep pockets (like Sony) which fueled speculation that Sega did not have the resources for a prolonged marketing campaign.

End of production

In January 2001, Sega announced that production of Dreamcast hardware was to be discontinued, although the 50 to 60 titles still in production would be published. The last North American release was *NHL 2K2*. With the company announcing no plans to develop a next-generation successor to the Dreamcast, this was Sega's last foray into the home console business. By the time Sega decided to cease development of the Dreamcast, about 10 million consoles had been sold.

Though the Dreamcast was officially discontinued in early 2001, commercial games were still developed and released afterwards, particularly in Japan. Many consider the critically acclaimed arcade shooter Ikaruga developed by Treasure to be the Dreamcast's swan song. It was released in September 2002 in Japan only after a large amount of speculation on the game's fate; its US release was on the Nintendo GameCube in April 2003. Hacked unreleased games like Propeller Arena and Half-Life continued to become available to the public by program decoders like Echelon. On February 24, 2004, Sega released their final Dreamcast game, Puyo Puyo Fever, although a small number of third-party games are still being released, such as the recent release of Trizeal, released in April 2005, or the upcoming releases for 2006, Rajirugi and Under Defeat.

Despite its short lifespan, the Dreamcast is still a very popular and highly-regarded console among many fans due to its impressive library of both mainstream and quirky titles. It is even starting to become a cult classic, as the system is getting harder to find (in fact, although the Dreamcast was officially discontinued in January 2001, Sega continued to produce the console for a short time afterwards due to rising demand, not least among collectors and hard-core fans).

Although Sega's last entry into the console market, the Dreamcast is not blamed for the company's downfall; rather it is still considered one of the best efforts of Sega to remain competitive and salvage its reputation, after turning off customers and developers through the Sega 32X and Sega Saturn. Unfortunately, the overall success of the Dreamcast was not enough to make up for the losses Sega had taken in their previous ventures.

Several Dreamcast emulation projects have emerged after the Dreamcast's end of production, with Chankast being the most notable.

Technology

Dreamcast used a proprietary format called GD-ROM (Gigabyte Disc Read Only Memory) or "GigaDisc" for storing games in order to discourage software pirates, although it had similar overall technology to the CD-ROM. However, the first run of discs had a high rate of defects; and eventually pirates managed to copy the games anyway (in some cases distributing them before the release of the legitimate versions). The primary reason this was possible was the existence of regular-CD booting code in the Dreamcast BIOS to enable multimedia functions (called Mil-CD) for music CD releases on the Japanese market; this was eventually discovered and exploited by pirates. Mil-CD support was removed from the final Dreamcast revisions toward the end of the console's life, but rampant piracy is often cited, erroneously, as one of the major reasons for the failure of the Dreamcast. (Software sales remained strong throughout the console's lifespan.) Sega's decision to implement a "CD-ROM" (the common public reference to the GD-ROM) was also an effort to save costs, but this disappointed potential customers who had expected DVD support; the rival PlayStation 2 sold well partly because of its support for DVD media.

The optical drive in the Dreamcast works in CAV (Constant Angular Velocity) mode, which spins the disc at a constant speed regardless of the laser's position. This is different from a normal CD-ROM drive, which spins the disc in CLV (Constant Linear Velocity) mode, where the disc spins progressively slower as the laser moves further away from the disc's center. CLV exists because the diameter of the data ring on the disc becomes wider as the disc progresses, and the data moves past the laser at a faster rate than inner rings. Therefore, to receive the data at a constant speed, the drive must slow the disc down as the data ring enlarges. But since the Dreamcast works in CAV mode, occasionally, when there was space to spare on the CD-R, Dreamcast game pirates would fill the disk image on which the game was distributed with empty space at the beginning, so the disk image size would be about 700 MB. Therefore, when burned, the data would be pushed further outward on the disc, mimicking the layout of an actual GD-ROM. This practice is called "dummying." They do this because CD-Rs are written in CLV mode, and the Dreamcast will not read data from them very fast if the data is close to the inner edge. Therefore, the data should, optimally, be as close to the outer edge of the disk as possible, for the fastest loading times. Some pirated games do not have this trait, presumably because they need the empty space, and therefore have longer loading times and choppy music and video (because the data cannot be loaded fast enough).

The curious thing about how pirates managed to copy games stored on a GD-ROM, which can supposedly hold about 1.2 gigabytes of data, to a CD-R, which commonly holds 700 megabytes of data (though 870 megabyte discs exist, they are extremely uncommon) was that many games simply did not use the maximum capacity of a GD-ROM, and therefore fit on a standard CD-R with no modification. Games that did take advantage of the GD-ROM's extra capacity required some tinkering from hackers; the most common method was to downgrade the video and audio portions of the disc to a lower bitrate, so they would take up less space. Although this method is usually successful, a few games, most noticeably Shenmue II and Sonic Adventure, are missing sound and sometimes video on pirated versions. This may be due to the process of "ripping", different from the alternate definition of copying the contents of a CD to a hard drive. "Ripping" in the Dreamcast piracy context means to completely remove some parts of game audio and video, since they are simply too large to downgrade with any success. However, downgrading or removing audio and video streams wasn't the only method used by release groups. Some even denote a high amount of hardware and software knowledge, like the method used on the Echelon release of Skies of Arcadia. Rather than downsampling the audio and video the hackers compressed the video game data on the disc and wrote a small program to decompress the data on the fly.

The Dreamcast continues to have a modest hacking enthusiast community. The availability of Windows CE software development kits on the Internet, as well as ports of Linux [2] and NetBSD/ Dreamcast [3] operating systems, gave programmers a selection of familiar development tools to work with. A homebrew minimal operating system named KallistiOS offers good hardware support (though does not provide multitasking, which is generally unimportant for games anyway). Many emulators and other tools such as MP3 and DivX players and image viewers have been ported to or written for the console, taking advantage of the relative ease with, which a home user can burn a CD which is bootable by an unmodified Dreamcast.

Microsoft co-operated with Sega in hopes of promoting its Windows CE operating system for video games. Windows CE offered easy porting to the Dreamcast of existing PC applications on the Dreamcast, but offered limited capabilities relative to the Dreamcast's native operating system. When developers took advantage of the easy development time offered by Windows CE, the resulting games (e.g., Sega Rally 2) lagged in performance and framerate. The only Windows CE application most users saw was the pack-in CD containing a CE-based dialer and web browser.

The Sega NAOMI arcade game hardware platform uses the same technology as the Dreamcast. NAOMI-based games such as *Crazy Taxi* were easily ported to Dreamcast.

The Dreamcast is also able to output true 640x480 VGA, which set it apart from other consoles of its day. The system, when combined with the VGA adapter accessory (mentioned below), switched to the mode for the high-res, non-interlaced picture. However, the feature was underused by the public despite the potential for improved video quality with the use of a PC monitor. This was likely due to lack of knowledge on the subject. Also, a few notable games were not compatible with this mode, including certain Capcom fighting games and 2D shoot-'em-up games. Other well known implementations in graphics started on Sega's console by developers were cel-shading and bump mapping.

Online

Dreamcast consoles came packed with a disc containing web browser software allowing dial-up Internet access. Dream Passport was the Japanese browser, Planetweb was used in America and DreamKey in Europe. Version 3.0 of Planetweb included broadband, Java, Flash and mouse support. In Europe, the final version of *DreamKey* was 3.0.

The Dreamcast was one of the first home console systems to offer online gameplay with the game ChuChu Rocket! (which was distributed free to Dreamcast owners in Europe). The SegaNet online dial-up service (US$29/month membership) attracted 750,000 subscribers in America alone. About twenty-two games, including Quake III Arena and Phantasy Star Online, supported SegaNet. Other major online games include 4x4 Evolution (first crossplatform game), Starlancer and Ferrari F355 Challenge. Although the online features of most commercially-released online-capable Dreamcast games are no longer supported; fans have developed servers for playing pirated copies of Phantasy Star Online, Quake 3 Arena can still be played online by setting up a server using software and a map pack released by Sega, and hackers have also made it possible to play an unreleased bowling game online. Other games still Online are Ferrari F355 Challenge which is a racing simulation, 4x4 Evolution cross platform, and Maximum Pool Online which still have hundreds of players online. In America, SegaNet ran until the beginning of January 2003.

In Europe, the online service was known as Dreamarena. This was created and operated for Sega Europe by a partnership between ICL and BT (ICL developed the web sites and software, with BT providing the dial-up capabilities and network infrastructure). The service was free, and the game servers hosted within it could not otherwise be accessed from the Internet. Dreamarena ran until the beginning of March 2002. As the DreamKey web browser was customised to only work with Dreamarena, Sega subsequently offered a free replacement version which would allow connection with the user's own Internet service provider.

The modem module in the Dreamcast could easily be replaced with a broadband module to allow networked gaming over Ethernet. Phantasy Star Online version 2 included support for this device.

Models

The standard Dreamcast unit is made of white and grey plastic. The power light, like the Dreamcast logo in NTSC regions, is orange. (This color was used as it is considered to be lucky in Japan.) Games were sold in jewel cases which initially had the Dreamcast name and logo on a white background, but later games used a black background (blue in Europe).

The unit was packaged with a video cable which supports composite video and right/left stereo audio. Available separately were an S-Video cable, a RF connector (included as standard in the UK) and a VGA adapter (see accessories below).

In the United States, a black Dreamcast was released in limited numbers with a sports pack which included two Sega Sports titles. Electronics Boutique offered a blue Dreamcast through its website. Similar offerings were sold through the Lik-Sang website. Cases of different colors like blue, red, orange, and green were sold for replacements of the original casing. In Japan, Sega released many varieties of the system, including limited edition Sonic anniversary editions, and Hello Kitty outfits. The Sega Dreamcast Hello Kitty was released in 2000 in Japan. Due to its limited production, it has become an extremely rare collector's piece. The package contains a keyboard, a controller, a VMU, a mouse, and a Hello Kitty trivia game. The console and accessories are translucent pink in color with some printed designs. The Sega Dreamcast Hello Kitty special edition was also available in a blue with all the same accessories.

Units manufactured with the version number of 2 would not read CD-R media and therefore could not be used to play pirated games, and also had the unfortunate side effect of not being able to play independent games such as the three bleemcast! discs, Feet of Fury, Inhabitants, or Maqiupai.

The Dreamcast in Europe had its spiral logo in blue, similar to the logo on earlier Sega systems. This change in logo is thought to have been for copyright reasons. A German company, Tivola, had been using a similar swirl logo years before Sega branded the Dreamcast with the orange swirl. As well as the VGA mode (again using an adapter), the European Dreamcast supported PAL video, in both 50 and 60Hz modes. Games in Europe were sold in jewel cases exactly twice as thick as their US counterparts.

A third-party company from China named Treamcast released a portable modified Dreamcast which used the original first party Dreamcast components with a custom made plastic casing. This small system with its fold-down display resembled the later PS One. Many companies included software and a remote with the unit that enabled it to play MP3s and Video CDs. When the internet import videogame store, Lik-Sang, contacted Sega to ask permission to sell a modified version of the system with Sega trademarks on the system, they were told that Sega did not approve of the unit, and felt that it violated their trademarks. In reality, this system is not any different than selling a Dreamcast pre-modified with a third party shell, as the system's internals still use first party hardware, and contain no modifications whatsoever aside from the outside casing and modifications for internal sound and video.

Recently, in 2005, the internet import store, Lan-Kwei, has started selling a "Treamcast" portable modified Dreamcast with a 16:9 widescreen LCD. Aside from the cosmetic differences in the case to accommodate the larger screen, there are no differences between the original Treamcast portable modified Dreamcast and the newer widescreen model.

Accessories

The Visual Memory Unit, or "VMU", was the Dreamcast's memory card. It had a monochrome LCD screen, a D-Pad, and two gaming buttons. It could play minigames loaded onto it (a Chao game was obtainable in *Sonic Adventure*, for example). It could also display a list of the saved game data stored on it, and two VMUs could be connected together (end-to-end, needing no other hardware) to exchange data.

Standard memory cards could also be purchased without the additional features of the VMU. Most of these were manufactured by third-party companies (such as the Nexus Memory Card), although Sega eventually released a 4X memory card. The 4X cards did not have the VMU screen or stand-alone abilities, but they had four times the space by switching between four 200-block sectors. Most Dreamcast games supported a rumble pack ("Jump Pack"), which was sold separately and could be plugged into the controller. In Japan, the Jump Pack was named the "Puru Puru Pack".

The Dreamcast controller offered an analog stick, a D-pad, a Start button, four gaming buttons (labeled A, B, X, and Y), and two analog index finger triggers on the underside. It also contained two slots which fit memory cards or the rumble pack; the uppermost one had a window through which the VMU's display could be seen. The Dreamcast controller was somewhat large and a few players found it difficult to hold.

Unique to the Dreamcast among current console gaming systems, it could use a VGA adapter for output to a computer display and HDTV compatible sets (which provided much better quality than a television set).

The Dreamcast supported a mouse as well as a keyboard which was useful when using the included web browser, but was also supported by certain games such as The Typing of the Dead and Phantasy Star Online.

There was a microphone peripheral used for Alien Front Online, version 2.6 of the Planetweb Web browser (long distance calling support), the European Planet Ring collection and Seaman. Other peripherals included a fishing rod controller (used for the Sega Marine Fishing line) and the maracas for Samba de Amigo. Steering wheel controllers and dance pads were also available.

Sega also produced a light gun for the system, although this was not sold in the US presumably because Sega did not want its name on a gun in the light of recent school shootings. American versions of light gun games even blocked out using the official gun. Several third parties made compatible guns for the few light gun games released, including House of the Dead 2 and Confidential Mission. The only other light gun compatible games were Death Crimson OX and its Japanese only prequel, Virtua Cop 2 on the Sega Smash Pack, and a light gun minigame in Demolition Racer No Exit.

Sega also released the extremely heavy-duty and well-regarded Arcade Stick, a digital joystick and six buttons using the same switches internally as an arcade machine. Although it could not be used for many Dreamcast games, due to the lack of the analogue joystick, this helped cement the Dreamcast's reputation for 2D shooters and fighting games. The Arcade Stick itself has lived on beyond the Dreamcast, and adaptors are now available to use it on other hardware platforms.

Sega also developed the Dreameye, a digital camera for the Dreamcast, as well as a Zip drive for the console, but these products were never released to the public.

Screenshots

The Sega Dreamcast currently has over **276** games available in its library

The Dreamcast features games with the following ratings from the ESRB:

- Everyone: **151**
- Teen: **93**
- Mature: **32**

Technical specifications

CPU: SH-4 RISC CPU with 128 bit graphic computational engine built-in (operating frequency: 206 MHz 360 MIPS/1.4 GFLOPS)
Graphics Engine: PowerVR2 CLX2, capable of drawing around 4 million polygons per second (though rarely pushed this far; the models for the polygons would become a limiting factor, chipping away video memory for the textures)
Memory: Main RAM: 16 MB (Hyundai), Video RAM: 8 MB, Sound RAM: 2 MB
Sound Engine: Super Intelligent (Yamaha) Sound Processor with 47MHz 32-Bit ARM7 RISC CPU core built-in (64 channel PCM/ ADPCM)
GD-ROM Drive: 12x maximum speed (when running in Constant Angular Velocity mode)
GD-ROM: Holds up to 1.2 GB of data. A normal CD-ROM holds 700 megabytes.
Inputs: USB-like "Maple Bus". Four ports support devices such as digital and analog controllers, steering wheels, joysticks, keyboards

and mice, and more.
Dimensions: 189 mm x 195 mm x 76 mm (7 7/16" x 7 11/16" x 3")
Weight: 1.9 kg (4.4 lb)
Color: White
Modem: Removable; Original Asia/Japan model had a 33.6 kbit/s; models released after September 9, 1999 had a 56 kbit/s modem
Broadband: these adapters are available separately and replace the removable modem
HIT-400: "Broadband Adapter", the more common model, this used a Realtek 8139 chip and supported 10 and 100 Mbit speeds.
HIT-300: "Lan Adapter", this version used a Fujitsu MB86967 chip and supported only 10 Mbit speed.
Color Output: Approx. 16.77 million simultaneous colors (24 bit)
Storage: Visual Memory Unit ("VMU") 1 Mbit (128 KByte) removable storage device and 4x memory cards that hold four times as much data

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The Phantom

The Phantom is a controversial video game console currently being developed by Infinium Labs. It uses a direct-download content delivery service instead of the disks and cartridges used by most game consoles. The system has caused quite a bit of controversy in both the gaming and business worlds due to the constant pushing back of its release date and a number of financial scandals involving Infinium Labs.

History

Announcement

In 2003, the startup company Infinium Labs issued a press release to all news outlets stating that they would soon release a "revolutionary new gaming platform." The press release contained no specific information, but did include a computer-generated prototype design. Due to the excessive use of buzzwords and a suspicious lack of details, the product was derided almost from the start by news sites such as IGN and Slashdot and the popular comic strip Penny Arcade. It also received the first place in Vaporwares 2004 in Wired News.

Legal Conflict

Because of the mystery surrounding Infinium Labs, the editor of the PC hardware website HardOCP published an article detailing the questionable history of Infinium Labs' CEO, Timothy Roberts, and the company's mysterious finances. The article was posted on September 17th, 2003.

On February 19th, 2004 (five months later) Infinium Labs' lawyers sent a cease and desist letter to the editor of HardOCP, demanding that the news site take down the derogatory article about Timothy Roberts. Rather than concede to the demands, Kyle Bennett filed a counter suit.

In mid-September of 2004, the Judge ruled that Infinium Labs must produce several financial documents (including the personal income tax statement filed by Roberts) by September 30th, and the cease and desist order from Infinium Labs was struck down; a win for HardOCP. Infinium Labs has not yet produced the required documents.

On October 31, 2005 it came to light that the Securities and Exchange Commission have given notice to Tim Roberts, chairman of Infinium Labs' board of directors, that charges are being planned against him for violating federal securities law. Although not officially specified by the SEC, Infinium suspects the charges are related to an SEC investigation that revealed phony fax scams, where several penny stocks, Infinium among them, were unlawfully promoted to investors.

On October 31, it was also revealed that while Tim Roberts was CEO of Infinium, the company wasn't properly reporting its payroll taxes. The company now owes large fines and interest. All this comes after Infinium revealed they have only have a grand total of $134,000, yet they are at least $4 million in debt.

On November 17, 2005, Kevin Bachus, CEO of Infinium, handed in his resignation as CEO of the company. Infinium's board of directors accepted it the next day and elected Greg Koler, a consultant for Infinium as CEO and President. Many interpreted this as a bad sign, as Kevin Bachus, one of the former architects of the Xbox, had brought much needed legitimacy to the company, as before Bachus took over, many doubted the intentions of Infinium Labs.

First Sighting

The Phantom was first seen in action at the 2004 Electronic Entertainment Expo.

System Specifications

At the 2004 Electronic Entertainment Expo, Infinium Labs released several new details regarding The Phantom's hardware and functions.

Gaming Service

Infinium Labs announced at 2004's E3 that the Phantom would use a direct-download content delivery service. By connecting the system to a broadband internet connection, Phantom owners would be able to purchase games through the system's interface and have the game downloaded directly onto the unit's hard drive. Also, a subscription plan would be available. With the subscription (available in two-year contracts), people could pay a $29.95 monthly fee, allowing them to get the actual Phantom unit for free and to download a selected number of games for free each month.

Hardware

As of May, 2004, these are The Phantom's proposed hardware specifications:

- **CPU**: AMD Athlon XP 2500+
- **Video Card**: nVIDIA GeForce FX 5700 Ultra, with 128MB RAM
- **RAM**: 256MB
- **Hard Drive**: 40GB "content cache"
- **Sound**: Dolby Digital 5.1 Audio
- **Control**: Custom game pad and keyboard-mouse combination unit called a "lapboard".
- **Wireless modules will be used to support a wireless lapboard and game pad.**

In August of 2005, during G4TV's "Attack of the Show" program, which featured Kevin Bachus, Infinium's then CEO and President, stated during an interview that the current hardware specifications for the Phantom would be changed, as computer games require more and more hardware to run smoothly.

Release Date

Infinium Labs does not have an official release date for the system. At the 2004 E^3, they promised that the system would be on store shelves by Christmas, 2004, a release date that was missed. When it became apparent that the December 2004 deadline would not be met, Infinium predicted the system's release to around March of 2005. That, also, has not been met, and Infinium Labs did not appear at E3 in 2005. [4] There were hints from Kevin Bachus, former Infinium CEO, that the Phantom would be released around the same time as the Xbox 360, but however this release date was also missed.

There is currently no official release date for the Phantom.

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Xbox

Microsoft Xbox

Manufacturer

Microsoft

Type

Video game console

Generation

Sixth generation era

First available

November 15, 2001

Media

DVD

Online service

Xbox Live

Top-selling game

Halo 2

The **Microsoft Xbox** is a sixth generation era video game console first released on November 15, 2001 in North America, then released on February 22, 2002 in Japan, and on March 14, 2002 in Europe. It was Microsoft's first independent venture into the console arena, after having developed the operating system and development tools for the MSX, and having collaborated with Sega in porting Windows CE to the Sega Dreamcast console. Notable launch titles for the console include Amped, Dead or Alive 3, Halo: Combat Evolved, Oddworld: Munch's Oddysee, and Project Gotham Racing.

History

Development

The Xbox was initially developed within Microsoft by a small team which included Seamus Blackley, a game developer and high energy physicist. The rumors of a video game console being developed by Microsoft first emerged at the end of 1999 following interviews of Bill Gates. Gates said that a gaming/multimedia device was essential for multimedia convergence in the new times of digital entertainment. In May 2000 the "X-Box Project" was officially confirmed by Microsoft.

Some see the Xbox as a way to capitalize on the growing video game market, noting that the PC market growth was stagnating. Being based upon Windows and standard PC hardware, the Xbox was more familiar to developers and as a result was significantly easier to develop for in contrast to PlayStation 2's proprietary processor and operating system. The Xbox also presented a standardized alternative to the near-endless variety of end-user configurations on the PC. The Xbox even brought high-end gaming technology to the mainstream, sporting a top of the line GeForce 3 equivalent graphics processor, a built-in Ethernet adapter, and Dolby Digital 5.1 sound.

According to the book Smartbomb, by Heather Chaplin and Aaron Ruby, the success of the Sony PlayStation worried Microsoft in late 1990s. According to article, "Bill Gates was becoming increasingly frustrated by Sony's success in the videogames market, and tried personally to convince Sony CEO Nobuyuki Idei to use a version of Microsoft Windows in Sony’s next-generation console but Gates was flatly rejected". Microsoft did not want to end up as being "just another corporate software maker". The X-Box project, according to this book, was a direct response to the PlayStation 2 which threatened Microsoft's PC dominance.

- Ruby, A., Chaplin, H. (2005) *Smartbomb: The Quest for Art, Entertainment, and Big Bucks in the Videogame Revolution*. ISBN 1565123468.

Software

The Xbox launched in North America on November 15, 2001. The greatest success of the Xbox's launch games was Halo: Combat Evolved, which was critically well-received [1] and one of the best-selling games of the year. Halo still remains the console's standout title. Other successful launch titles included NFL Fever 2002, Project Gotham Racing[2] and Dead or Alive 3 [3]). However, the failure of several first-party games (including Fuzion Frenzy [4] and Azurik: Rise of Perathia) damaged the initial public reputation of the Xbox.

Although it enjoyed strong third-party support from its inception, many early Xbox games did not take full advantage of its powerful hardware, with few additional features or graphical improvements to distinguish themselves from the PS2 version, and this negated one of the Xbox's main selling points. Lastly, Sony countered the Xbox by making exclusivity deals for highly anticipated games such as the Grand Theft Auto series and Metal Gear Solid 2: Sons of Liberty.

In 2002 and 2003, several releases helped the Xbox to gain momentum and distinguish itself from the PS2. The Xbox Live online service was launched with a strong lineup including MotoGP 2, MechAssault and Ghost Recon. Several best-selling and critically-acclaimed titles for the Xbox were published, such as Tom Clancy's Splinter Cell, Ninja Gaiden, and Star Wars: Knights of the Old Republic. Take-Two Interactive's exclusivity deal with Sony was amended to allow Grand Theft Auto III, Grand Theft Auto: Vice City and its sequels to be published on the Xbox. In addition, many other publishers got into the trend of releasing the the Xbox version alongside the PS2 version, instead of delaying it for months.

In 2004, Halo 2 set records as highest grossing release in entertainment history [6] as well as being a successful killer app for the online service. That year, Microsoft and Electronic Arts reached a deal which would see the latter's popular titles enabled on Xbox Live. In 2005, the long-awaited Xbox-exclusive Doom 3, Half-Life 2, and Far Cry Instincts were released.

Xbox Live

In November 2002 Microsoft released the Xbox Live online gaming service, allowing subscribers to play online Xbox games with (or against) other subscribers all around the world and download new content for their games to the hard drive. This online service works exclusively with broadband. 250,000 subscribers had signed on in 2 months since Live was launched [7]. In July 2004, Microsoft announced that Xbox Live reached 1 million subscribers, and announced in July 2005 that Live had reached 2 million.

Market share

Some critics were initially concerned that the Xbox would allow Microsoft to extend its dominance of the PC software market to consoles. However, as of February 2005, estimates show the Xbox's share of the worldwide console market is only moderately ahead of the Nintendo GameCube and far behind the PlayStation 2. According to company documents, Microsoft has shipped 22 million consoles to retailers worldwide. Although ahead of the GameCube's 18.5 million, this was far behind the PlayStation 2's 90 million when the Xbox was discontinued (the PlayStation 2 has since reached 100 million afterwards). The Xbox has enjoyed its greatest success in North America, where an estimated 13.5 million units have been sold and where it managed for a time to outsell the PS2. In Europe, the Xbox's market share is currently ahead of the GameCube, but is still behind the PlayStation 2.

The Xbox has sold poorly in Japan because Microsoft was unable to enlist enough local developers to cater to Japanese interests. The large size of the hardware itself did not endear itself to size-sensitive Japanese customers, nor did the fact that it was produced by a foreign company.

Internal documents show that the Xbox division had invested $4 billion from 2000 to 2005. In particular, the Xbox hardware itself is a loss leader, since the console was sold at a loss even at its debut price. The losses deepened when sales of the Xbox increased and when the price was reduced successive times to compete with PlayStation 2. Microsoft predicted that it would not make a profit on the Xbox for at least three years. This prediction turned out to be correct; Microsoft Game Studios, Microsoft's game division in charge of Xbox development, had its first profitable quarter reported in January 2005.

Hardware

The Xbox was designed to take advantage of a slowdown in the saturated PC gaming market and incorporates a built-in Ethernet adapter. At the time of its introduction, the Xbox was the only game console to do so. Also, the console cost as much as the high-end GeForce 3 video card alone in 2001, while having comparable graphics processing power (the Xbox's NV2A graphics chipset is a derivative of the GeForce 3). Nonetheless, most of these features were not fully exploited in its first year of launch, notably the lack of Xbox Live online multiplayer.

The Xbox was the first console to incorporate a hard disk drive, used primarily for storing game saves (eliminating the need for separate memory cards) and content downloaded from Xbox Live. Some games also use it as a disk cache, for faster game loading times. Some games support "Custom soundtracks," another particularly unusual feature allowed by the hard drive. An Xbox owner can copy music from standard Audio CDs so players can replace the soundtrack of Xbox games that support custom soundtracks.

Although the Xbox is based on commodity PC hardware and runs a stripped-down version of the Windows 2000 kernel using APIs based largely on DirectX, it incorporates restrictions designed to prevent uses not approved by Microsoft. The Xbox does not use Windows CE due to Microsoft internal politics at the time, as well as limited support in Windows CE for DirectX.

The Xbox itself is much larger and heavier than its contemporaries. This is largely due to a bulky tray-loading DVD-ROM drive and the standard-size 3.5" hard drive. Because of this, the Xbox has found itself a target of mild derision, as gamers poke fun at it for things like a warning in the Xbox manual that a falling Xbox "could cause serious injury" to a small child or pet. However, the Xbox has also pioneered safety features, such as breakaway cables for the controllers to prevent the console from being yanked from the shelf.

The original game controller design, which was particularly large, was similarly often criticized since it was ill-suited to those with small hands. In response to these criticisms, a smaller controller was introduced for the Japanese Xbox launch. This Japanese controller (which was briefly imported by even mainstream video game store chains, such as GameStop) was subsequently released in other markets as the "Xbox Controller S", and currently all Xbox consoles come with a "Controller S", while the original controller (known as Controller "0" or "The Duke") was quietly discontinued.

Several internal hardware revisions have been made in an ongoing battle to discourage modding (hackers continually updated modchip designs in attempt to defeat them), cut manufacturing costs, and to provide a more reliable DVD-ROM drive (some of the early units' drives gave Disc Reading Errors). Microsoft extended the warranty on those first generation Xboxes that came with faulty drives and fixed them for free, unlike Sony and their first generation PS2s.

Detailed specifications

CPU: 32-Bit Micro PGA2 733 MHz Intel Coppermine Core, soldered in, with a 133 MHz FSB. It shares the same cache size and S-Spec number as a Celeron but it has a higher FSB and architecture like the Pentium III.
368 double precision MIPS (Whetstone) per CPU
605 integer MIPS (Dhrystone) per CPU
Graphics Processor: 233 MHz custom chip named the NV2A, developed by Microsoft and nVIDIA (based on of the GeForce 3 but with 2 vertex shaders to the GeForce 3's single vertex shader)
Total (shared) Memory: 64 MB DDR SDRAM running at 200 MHz, supplied by Hynix or Samsung depending on manufacture date and location
Memory Bandwidth: 6.4 GB/s
Polygon Performance: 125 million flat-shaded polys/second
Sustained Polygon Performance: 100+ M/s (transformed and lit polygons per second)
Micropolygons/particles per second: 125 M/s
Particle Performance: 125 M/s
Simultaneous Textures: 4
Pixel Fill Rate - No Texture: 4.0 G/s (anti-aliased)
Pixel Fill Rate - 1 Texture: 4.0 G/s anti-aliased
Compressed Textures: Yes (6:1 through DDS)
Full Scene Anti-Aliasing: Yes
Micro Polygon Support: Yes
Storage Medium: 2-5x DVD (XFAT), 8 gigabyte hard disk (new consoles contain a 10GB physical hard drive, though it is formatted to only use 8GB, uses XFAT), optional 8MB memory card for savegame transfer
I/O: 2-5x IDE DVD, 8 or 10GB IDE hard disk, USB memory card (flash)
Audio Channels: 64 3D channels (up to 256 stereo voices)
3D Audio Support: Yes, 5.1
MIDI DLS2 Support: Yes
AC3 (Dolby Digital) Encoded Game Audio: Yes (via TOSLINK)
Broadband Enabled: Yes (10/100base-T ethernet)
DVD Movie Playback: Yes (separate DVD Playback Kit/Remote required or by modding the XBOX and run homebrew sofwares that can playback DVD Movie)
Maximum Resolution (2x32bpp frame buffers +Z): 1920(vert.)x1080(horiz)
Note: NTSC (Non-HD) TV's have less than 500 horizontal lines. PAL TV's have less than 600 horizontal lines.

EDTV and HDTV Support: 480p/720p/1080i (see game boxes for supported resolutions).
Controller Ports: 4 proprietary USB ports
Weight: 3.86 kg
Dimensions: 324 × 265 × 90 mm (12.8 × 10.4 × 3.5 inches)

Special Limited Editions

Clear Black Limited Edition

In 2001, a Clear Black Limited Edition Xbox was released in Japan to commemorate the Xbox's Japanese release. The system had a limited manufacturing run of 50,000 units, and originally retailed for ¥35'800 yen. Included with the Clear Black console was a matching Clear Black Controller S, an Xbox Component AV pack, and a key chain that had Bill Gates's signature and the console's serial number engraved in it.

Panzer Dragoon Orta Special Edition

On December 19, 2002, a Panzer Dragoon Orta Special Edition Xbox was released in Japan to commemorate the release of Panzer Dragoon Orta on the Xbox. This quickly became the most sought-after Xbox to date. This Special Edition had a limited production of 999 units; however, it is rumored that there are actually 1,049 units in total. The console's special features included a white case with the Panzer Dragoon Orta logo in top's the lower left hand corner, as well as some artwork from Orta surrounding the Xbox jewel. The Panzer Dragoon Orta Special Edition was priced at ¥35'800 ($358) and could only be pre-ordered on November 1, 2002 through Sega Direct. Included with the Special Edition console was a matching white Controller S, an Xbox Component A/V cable, an Xbox Component AV pack, a copy of *Panzer Dragoon Orta* with its soundtrack CD, and a dragon head necklace.

Green Limited Edition

On May 2, 2003 a Translucent Green Limited Edition Xbox was released in Europe to celebrate Xbox's one-year European birthday. The console came with two matching Controller S and retailed for €229/£149. The styling of the Translucent Green Xbox is identical to Debug Units used in game development; of course, the retail versions lacked the words "Debug Unit" on the front of the case. The green

Controller S was also sold separately.

Pure White Limited Edition

Image:Pure White Limited Xbox.jpg On February 22, 2004, a Pure White Limited Xbox Console was released in Japan, to commemorate the console's two-year anniversary in that country. The system had a limited manufacturing run of 1,000 units and allowed purchasers to personalize their console with up to twenty letters (Japanese characters not allowed) engraved on the case. The words "Limited Edition 2004" were also carved into the jewel of the console, and into the exclusive Controller S (right below the Xbox name). The original retail price for the Pure White Limited Xbox was ¥19'800 yen ($186) and was only available for purchase online at the Official Xbox Japan website between the dates of January 30 and February 6, 2004. Included with the Pure White console was a matching Controller S, a DVD Playback Kit, and an Xbox Live Starter Kit with a free one-year membership and voice communicator.

Crystal Limited Edition

On March 14, 2004, the Crystal Limited Edition Xbox was released in Europe to celebrate the Xbox's European birthday. With a price tag of €199/£139, the Crystal Limited Edition came with a transparent console and two matching Crystal Controller S. It is unknown how many Crystal Limited Editions were produced, however; later bundles were released pairing a re-released Crystal Xbox with different Xbox games and Xbox Live subscriptions. The Crystal console was re-released on October 8, 2004 in a new bundle (but with only one controller) at the normal Xbox price of €149/£99. A Crystal Controller S was also availible separately.

Halo Special Edition

On March 14, 2004, Microsoft released a special version of the Xbox in the United States, Australia and New Zealand. This version was translucent green and came with a copy of Halo: Combat Evolved and a matching translucent green Controller S. The console case featured the *Halo* logo and the words "Special Edition"; the controller had a jewel that had the *Halo* logo in place of the normal Xbox logo. The version of *Halo* that came with this bundle was identical to other versions of *Halo*, with the exception of a "NOT FOR RESALE" notice placed on the front of the game case. 200,000 of these Xboxes were produced.

Kasumi-chan Blue Edition

On March 25, 2004, a Kasumi-chan Blue Xbox console was released in Japan. The system had a limited manufacturing run of 5,000 units, and was released simultaneously with Tecmo's fighting game, Dead or Alive Online. The translucent blue case was based on the costume of Dead or Alive's main character, Kasumi, and had "Dead or Alive Online" written in white lettering in the lower left corner of the top of the case. The original retail price was ¥22'800 yen ($215), and included the translucent blue console with a matching Controller S, a DVD Playback Kit, an Xbox Live Starter Kit with a free one-year membership, a copy of *Dead or Alive Online*, and a five-foot-long Kasumi body pillow.

Halo 2 Limited Edition (Blue)

On March 18, 2005, an Ice Blue Halo 2 Limited Edition Xbox was released in Canada and Asia. The console was translucent blue and retailed for approximately $249. Included with the Ice Blue console was a matching Controller S, and a copy of *Halo 2*.

Mountain Dew Limited Edition

The Mountain Dew Limited Edition Xbox was only available through a Mountain Dew sweepstakes requiring loyal Dew-drinking Xbox fans to amass 550 points in order to "buy" the Limited Edition Xbox. The sweepstakes spanned 5 months - from April to August - in 2004. Production numbers are unknown. The Mountain Dew Limited Edition Xbox was neon-green colored and had a special jewel atop the Xbox that had the words "Limited Edition" and the Mt. Dew logo under the Xbox name. Included with the neon green console was one of two games: Project Gotham Racing 2 or Amped 2.

Hello Kitty Crystal Edition

The Hello Kitty Crystal Xbox was released with Sanrio in Singapore, to commemorate the release of Hello Kitty Mission Rescue on the Xbox. The special edition console was translucent with a pink and orange Hello Kitty picture covering the X on top of the case. A limited production run of 550 units was sold at a retail price of S$99 (US$61), if you purchase selected Samsung LCD TVs during a promotion. Included with the Hello Kitty Crystal console was a matching Crystal Controller S and a copy of *Hello Kitty Mission Rescue*.

Official Xbox accessories

Audio/video connectors

- Standard AV Cable: Provides composite video and monaural or stereo audio to TVs equipped with RCA inputs. Comes with the system. European systems come with a RCA jack to SCART converter block in addition to the cable.
- RF Adapter: Provides a combined audio and video signal on an RF connector.
- Advanced AV Pack: A breakout box that provides S-Video and TOSLINK audio in addition to the RCA composite video and stereo audio of the Standard AV Cable.
- High Definition AV Pack: A breakout box, intended for HDTVs, that provides a YPrPb component video signal over three RCA connectors. Also provides analog RCA and digital TOSLINK audio outputs.
- Advanced SCART Cable: The European equivalent to the Advanced AV Pack, providing a full RGB video SCART connection in place of S-Video, RCA composite and stereo audio connections (composite video and stereo are still provided by the cable, through the SCART connector, in addition to the RGB signal), while retaining the TOSLINK audio connector. As Europe has no HDTV standard, no High Definition cable is currently provided in those markets.

Numerous unofficial third-party cables and breakout boxes exist that provide combinations of outputs not found in these official video packages; however, with the exception of a few component-to-VGA transcoders and custom-built VGA boxes, the four official video packages represent all of the Xbox's possible outputs. This output selectivity is made possible by the Xbox's SCART-like AVIP port.

Networking

- Ethernet (Xbox Live) Cable: A Cat 5 cable for connecting the Xbox to a broadband modem or router. Note that while there is an "official" Xbox 'System Link' cable (a crossover cat5e cable), any PC ethernet cable can be used in the normal way treating the xbox as an NIC, eg an Xbox-Xbox connection requires a crossover cable, whereas an xbox-switch connection requires a straight-through cable.
- Xbox Wireless Adapter: a wireless bridge which converts data

running through an ethernet cable to a wireless (802.11b or 802.11g) signal to connect to a wireless LAN. While the official Wireless Adapter guarantees compatibility with the Xbox, almost any wireless bridge can be used.

- Xbox Live Starter Kit: A subscription and installation pack for the Xbox Live service, as well as a headset (with monaural earpiece and microphone) that connects to a control box that plugs into the top expansion slot of a controller. The headset can in fact be replaced with most standard earpiece-and-microphone headsets; headset specialist Plantronics produce various officially-licensed headsets, including a special-edition headset for *Halo 2*.
- System Link Cable: A Cat 5 crossover cable for connecting together two to four consoles, for up to 16 total players. This functionality is similar to Sega's DirectLink for Sega Saturn.

Multimedia

- Xbox Media Center Extender: A kit that allows Xbox to act as a Media Center Extender to stream content from a Windows XP Media Center Edition PC. It can also be used for DVD playback.
- DVD Playback Kit: Required in order to play DVD movies, the kit includes an infrared remote control and receiver. DVD playback was not included as a standard feature of the Xbox due to licensing issues with the DVD format that would have added extra cost to the console's base price. By selling a DVD remote separately, Microsoft was able to bundle the cost of the DVD licensing fee with it. Although there is nothing to prevent the Xbox from acting as a progressive-scan DVD player, Microsoft chose not to enable this feature in the Xbox DVD kit in order to avoid royalty payments to the patent-holder of progressive scan DVD playback. Later, as the price of the Xbox dropped, the DVD remote was bundled.
- Xbox Music Mixer: A utility software bundled with a microphone that connects to an adapter that plugs into the top expansion slot of a controller. Provides a music player with 2D/3D visualizations as well as basic karaoke functions. It also allows users to upload pictures in JPG format (to create slide shows) as well as audio in WMA and MP3 format (for karaoke or a game's Custom Soundtracks feature) from a Windows XP machine running the Xbox Music Mixer PC Tool.

Controllers and removable storage

- The Xbox controller features two analog sticks, a digital pad, two analog triggers, a Back button, a Start button, two accessory slots, and six 8-bit analog action buttons (ABXY, Black, and White). The precise layout of the controls differs between the two variations of controller.
  - Standard Xbox Controller (AKA "Controller O" or "The Duke"): Originally the normal Xbox controller for all territories except Japan, this has since been quietly discontinued and replaced in Xbox packs by the Controller S. It is considered to be bulky. The black and white buttons are located above the ABXY buttons, and the Back/Start buttons are located between and below the d-pad and right thumbstick.
  - Controller S: A smaller, lighter Xbox controller. Once the standard Xbox controller in Japan, it was released in other territories by popular demand, and eventually replaced the standard controller in the retail pack for the Xbox console. The white and black buttons are located below the ABXY buttons, and the Back/Select buttons are similarly placed below the left thumbstick.
- Memory Unit: An 8 MB removable solid-state memory card onto which game saves can either be copied from the hard drive when in the Xbox Dashboard's memory manager or saved during a game. Note that some recent games (e.g. Ninja Gaiden and Dead or Alive Xtreme Beach Volleyball) do not support this accessory as a cheat prevention measure. This system has been defeated by the Xbox hacking community, who have developed tools to modify gamesaves to work in a different console, though some unique technical information concerning the recipient Xbox must be known.
- Logitech 2.4 GHz wireless controller. Approved by Microsoft for wireless gameplay with Xbox.

Xbox and DirectX

Microsoft's set of low-level APIs for game development and multimedia purposes, DirectX, was used as a basis for the Xbox's hardware programming. The Xbox API is similar to DirectX version 8.1, but is non-updateable just like other console technologies.

Modding the Xbox

The recent popularity of the Xbox has inspired efforts to circumvent the built-in hardware and software security mechanisms (sometimes in order to use the Xbox as a low cost web server), as well as to add customized design touches to the console's case (similar to PC case modding). Hardware modding can involve anything from simply replacing the console's green decorative "jewel" with a custom-designed one to opening up the case and installing a modchip.

In July 2005, a 22 year old Cambridge University graduate was convicted under the EU Copyright Directive for modifying Xboxes and selling them with an upgraded 200GB hard drive, which was pre-loaded with 80 games. This was the first conviction of its kind in the UK. (The Directive makes it illegal to circumvent copy protection systems on hardware including video game consoles). It is the first conviction since the Directive was enacted in October 2003 in the UK. He was sentenced to 140 hours community service, ordered to pay £750 costs at a court in Caerphilly, Wales, and his computer equipment was confiscated.

Software modding is much less intrusive, and only involves running software exploits to trick the Xbox into running unsigned program code. This allows running an alternate dashboard such as [UIX], Avalaunch, Evolution-X or UnleashX and in turn makes playing original (free) homebrew games or various older games through arcade and console game emulators possible. This is especially attractive as the Xbox is designed to output to TVs, and high-quality controllers and arcade sticks are available for it.

The original hard drive can be replaced with a larger one. Then Xbox games can be copied from the DVD to the hard disk with programs such as DVD2Xbox and PxHDDLoader, and then played directly from the hard drive. This allows the user to spare game disks from scratching and allows for faster load times. This process does require a modded Xbox using one of the alternative dashboards, and is used by scrupulous users to eliminate load times or leave their games in storage, and by unscrupulous users to play illegally copied games.

Beyond gaming, a modded Xbox can be used as a media center with the Xbox Media Center software (XBMC) allowing the playing of DVDs without the DVD dongle/remote and streaming of music and video files from the hard drive or from another computer over a network. A modded Xbox can even be configured into a computer running Linux, FreeBSD, or Microsoft Windows CE operating systems.

Modding an Xbox may require opening the Xbox case, and would certainly void the Xbox's warranty. Also, most internal hardware modifications will render an Xbox unable to participate in Xbox Live, which has forced many modders to use a switch that turns on and off their modifications. As of November 2004, Microsoft has been taking new actions for banning Xboxes with hard drive modifications from the Xbox Live service. One such successful use of Live to discourage modding was when the hit game *Halo 2* was released, and many owners of modded consoles found out that they were permanently banned from the Xbox Live service.

Probably the most legal way of modding the Xbox is replacing the whole motherboard so that you can install Linux or any other operating system designed for PC without having to hack anything. There are now sites that offer to modify the software on your Xbox for free. Modding your Xbox in this manner will allow you to retain your original Xbox warranty because you are not required to open the console.

Price history

North America

US$299 (November 15, 2001, Launch Price)
US$199 (May 15, (2002)
US$179 (May 14, (2003)
US$149 (March 29, 2004)
CAD$199 (March 29, 2004)

Europe

€479 (Launch Price (Ireland) 14 March, 2002),
£299 GBP (Launch Price March 14, 2002),
€299 (Launch Price (Rest of Europe) and Ireland April 26, 2002)
€249 (August 30, 2002)
€199 (2003)
£130 (2003)
€149 (August 27, 2004)
£99 (August 27, 2004)
€99 (Ireland; Christmas 2005 promotional price)

Oceania

AU$699 AUD (26 April, 2002, Launch Price) (Quickly dropped to $399 to compete with launch of Nintendo GameCube)
AU$399 AUD (2004)
AU$299 AUD (2005)
NZ$499 NZD (3 October, 2002, Launch Price)
AU$349 (2003)
NZ$399 (2003)
AU$299 (2004)
NZ$349 (2004)
AU$249 (2004, 2005)
NZ$299 (2004 Q2)

NZ$249 (2004 Q4, 2005)

Of note is the high European launch price. As with many games consoles (for example, the PlayStation series), the Xbox was launched with a price in GBP equal to its US price in USD (in this case, $/£299), and this price then converted for the rest of Europe. Obviously, ignoring the GBP-USD exchange rate in the way gives the impression of a 100% mark-up for Europe.

With a price-dropped PlayStation 2 and a comparatively inexpensive GameCube as competition, many users were naturally reluctant to invest in the console. Microsoft countered with a £100 price drop (and its equivalent in the rest of Europe) some scant months after launch. To avoid frustrating early adopters, they offered a bundle containing two games and one controller for free to any purchaser who could provide a sales receipt showing the original higher price.

Xbox 360

Main article: Xbox 360

Microsoft's next generation Xbox, the Xbox 360, was released on November 22, 2005. NVIDIA ceased production of the Xbox's GPU in August of that year, which almost certainly marks the end of Xbox production and the quick release of the Xbox 360 featuring a new GPU from NVIDIA's rival ATI.

When equipped with a removable hard drive add-on, the Xbox 360 supports a limited subset of the Xbox's library (more than 200 games at US launch) through emulation. (Games in emulation add support for the Xbox 360's higher screen resolution and anti-aliasing abilities.) These emulators are periodically updated to add compatibility for older games; these updates are available for free on Xbox Live for those with the hard drive. As the architectures are entirely different between Xbox and Xbox 360, unlike other backward compatible consoles such as the PlayStation 2, software emulation is the only viable option for compatibility.

Programming for Xbox

Due to the similarity in hardware compared to a PC, many programmers can create applications and games using the Xbox Development Kit (XDK) without a major learning curve. The XDK is a software development kit which includes libraries for C/C++. Using the XDK requires a license and distributing binaries compiled using the XDK without permission is illegal. OpenXDK is an open-source alternative.

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Xbox360

Xbox 360

Manufacturer

Microsoft

Type

Video game console

Generation

Seventh generation

First available

November 22, 2005

Media

DVD

Online service

Xbox Live

Top-selling game

Call of Duty 2

The **Xbox 360** is Microsoft's newest video game console, the successor to their original Xbox. It was released on November 22, 2005 in North America, December 2 in Europe, and December 10 in

Japan. It will be released on February 2, 2006 in Mexico, February 24 in South Korea, and March 2, 2006 in Australia, New Zealand, Hong Kong, Taiwan and Singapore.

The Xbox 360 will compete against the upcoming generation of consoles, including the Sony PlayStation 3 and Nintendo Revolution, and was officially unveiled on MTV on May 12, 2005, a week before the E3 trade show.

In most countries the console is sold in two different configurations: the "Xbox 360" and the "Xbox 360 Core System". The Xbox 360 configuration, often referred to as the "Premium Edition", includes a hard drive (required for backwards compatability with original Xbox games), a wireless controller, a headset, an Ethernet cable, an Xbox Live silver subscription, and a component HD AV cable (which can also be used on non-HD TVs).

The console hardware is based on a custom IBM PowerPC-based "Xenon" central processing unit (CPU) and a custom ATI R500-based "Xenos" graphics processing unit (GPU). It is equipped with 512 MB of RAM and uses the DVD-ROM storage medium for Xbox 360 game software.

Retail configurations and pricing

Microsoft's current retail strategy involves two different configurations of the Xbox 360 in most countries.

In United Kingdom and Europe, the console is available in two versions: an *Xbox 360* SKU, frequently referred to as the "Xbox 360 Premium Edition"; and an *Xbox 360 Core System* SKU. The *Core System* is not available in Japan, instead Microsoft offers a package identical to the *Xbox 360* SKU for ¥37,900 ($323.90 as of 21 December 05 8:09 UTC, [1]). The Xbox 360 Premium Edition is being sold in America for $399.99. Japanese pricing of the console has drawn some criticism, as customers there will be able to purchase the Xbox 360 Premium Edition for a lower price than in other countries.

Microsoft's decision has also allowed Japanese developers to fully utilize the hard drive to optimize game performance, since it is part of the default system configuration in their market. However because of the existence of a Core System edition, many games do not require a hard drive.

BusinessWeek magazine compiled a report which estimates that the total cost of all of the components in the "Premium Edition" is $525 USD, aside from additional manufacturing costs, meaning that Microsoft is losing at least $126 on every Xbox 360 system sold in the US, and at least as much in Japan. The strategy of selling a console at a loss is common in the console games industry, as console makers can usually expect to make up the investment with revenue from game licensing. Also, since Microsoft owns the patents for all custom hardware used in the Xbox 360, they can easily switch to new fabrication processes or change suppliers in the future in order to reduce manufacturing costs. This flexibility stands in contrast to the situation faced by the original Xbox, which contained a processor from Intel (a slightly modified Pentium III) and a GPU from NVidia (a modified GeForce 3). Both of these were very similar to "off the shelf" PC hardware and were therefore sold to Microsoft at inflated market prices. Because of these chips and the added expense of a hard drive component, Microsoft was never able to reduce the cost of manufacturing an Xbox below the break-even point. Microsoft's home entertainment division posted a loss through nearly every quarter of the console's lifecycle as a result. Microsoft hopes to avoid such a predicament with its new console, the company is predicting that a greater market share and falling hardware costs will make the Xbox 360 a profitable item.

Comparison table	**Xbox 360**	**Xbox 360 Core System**
Features		
Detachable hard drive (20 GB)	Yes	No
Controller	2.4 GHz Wireless	Wired with 9ft break-away cable
Xbox-Live Headset	Yes	No
Cables	Component HD-AV cable	Standard AV cable
Xbox Live Silver membership	Yes	Yes
One month membership for Xbox Live Gold (hard drive or memory unit needed for Core)	Yes	Yes
Ethernet cable	Yes	No
Media Remote (included in the initial shipment)	Yes	No
Pricing on release		
Australia (Australian dollars)	$649.95	$499.95

Canada (Canadian dollars)	$499.99	$399.99
Europe (Euro) [2]	€399.99 (€409.99 for Finland, Ireland, and Portugal)	€299.99 (€309.99 for Finland, Ireland, and Portugal)
Sweden (SEK)	3995:-	2995:-
Norway (NOK)	3395:-	2595:-
Japan (Yen)	¥39,795	not available
Mexico (Pesos)	$4999.99	$3999.99
New Zealand (New Zealand dollars)	$719.95	$549.95
United Kingdom (Pound sterling)	£279.99	£209.99
United States (USD)	$399.99	$299.99
Taiwan (TWD)	NT$13888	NT$10888

Launch details

The Xbox 360 has been released in North America, Europe, and Japan. Many stores sold out on the first day, and as of mid-January consumers had to hunt across many stores to find one in stock. In Japan, it was received far less enthusiastically, despite the low price and bonus features.

Available titles

Eighteen launch titles were available for customers in the United States and Canada on November 22, 2005. The European countries had fifteen titles available for the launch date of December 2, 2005. Japanese customers, however, only had six titles to choose from by the time the Xbox 360 was released on December 10, 2005. This discrepancy is partially accounted for by the time needed to localize the games.

Components and accessories

Controller

The Xbox 360 has the ability to support up to four wireless controllers. Alternately it can support two wired controllers through the use of its USB ports at the front, the USB port on the back will support a third controller. Since the controller has a USB cable, it is also usable in Windows PCs. The wired controller has a nine foot (2.74 m) long cord with a break-away feature. The wireless controller has a battery life of up to 25 hours on the NiMH rechargeable battery pack (optional and recommended) and a recommended range of up to 30 feet (9.14 m), although it has been tested to work at a greater range.

The controller for the Xbox 360 is a similar version of the Type-S gamepad for the original Xbox. The Xbox 360 controller adds an Xbox guide button, which has the appearance of the Xbox 360 emblem and is surrounded by a ring of green LEDs. Pressing the Xbox guide button will bring the Xbox 360 out of sleep mode, turn the console on or off, and bring up the "Xbox Guide" for access to digital movies, music and games libraries. The ring of light lights up the quadrant (on the controller as well as the console) that correlates with the quadrant of the screen you will be playing on (if more than one person is playing the game). The black and white buttons have been redesigned as shoulder buttons, now referred to as bumper buttons, located above the left and right triggers. The rear of the controller includes a port where the player can connect a headset. This port replaces the two proprietary USB connectors on the front of the Xbox controller.

Detachable hard drive

A detachable SATA 20 GB hard drive is used for the storage of games, music, downloaded trailers, levels, demos, player preferences, and community-created content from Xbox Live Marketplace; it may also be used to transfer such content between Xbox 360 units. A hard drive is also required for the user to be able to play backward compatible Xbox games. The individual drives will come pre-loaded with a promotional video about the making of the Xbox 360, the "XBOX 360 Custom Mix" (A collection of music), additional Dashboard skins, songs, additional Xbox Live Gamertag images, and Hexic HD, an Xbox Live Arcade game from Tetris creator Alexey Pajitnov. This content will be included on both the bundled hard drive and the stand alone product. This drive will not be included in the Core System bundle at launch, and also will not be sold separately in Japan.

According to J Allard, the chief of Microsoft's Xbox division, Microsoft may sell larger capacity detachable hard drives for the Xbox 360 in the future, and territories outside of North America may have a differently sized hard drive in the retail unit.

Faceplates

The default faceplate (Xbox 360's *Chrome* or Core System's *Chill*) can be replaced with a range of custom designs, each to be sold separately. Microsoft has also distributed two promotional faceplates, one for those present at the E3 2005 unveiling and one for VIP X05 attendees. The price of these custom designs are around $20 with more to be released by third party manufacturers.

AV connection cables

- Xbox 360 Component HD-AV Cable

  This set provides component RCA and composite video cables, along with 2-Y RCA stereo audio connectors for both high and standard definition output to TVs. All the connectors also offer an optical audio output jack for connection to surround sound systems.

- S-Video AV Cable (U.S., Japan, and Canada only) or Xbox 360 SCART AV Cable (Europe only)

  This set of cables connects to high-definition as well as standard-definition TVs that have S-Video or composite video inputs. The SCART AV Cable allows an RGB connection via the SCART connector.

- Xbox 360 D-Terminal AV Cable (Japan only) This cable is included in the Japanese Xbox 360 System.
- VGA HD AV Cable

  This set of cables allows for high-definition on flat-panel TV or computer monitors that have a VGA connector. It has 2-Y RCA male jacks for audio connection.And also comes with a Female to Female adapter to connect to monitors with non removable Vga cables

Other

- **Rechargable battery pack:** This nickel metal hydride battery pack provides up to 30 hours of continuous gaming for the wireless controller. It is recommended in place of disposable AA batteries (which differ slightly in voltage). It also ships as part of the Play & Charge Kit.
- **Play and Charge kit:** allows the controller to be recharged while playing. Also includes the rechargeable battery pack.

- **Memory Unit:** a portable 64MB device which allows the transfer of saved games, in-game achievements and unique gamer profiles to other Xbox 360 consoles.
- **Wireless Networking Adapter:** The Wi-Fi (802.11a, 802.11b, and 802.11g) adapter is sold separately and will be sold for $100/€80/£60/C$130/¥8,925. Using an official or third-party wireless bridge the console will automatically detect and link up with other Xbox 360 consoles that are within range and form a mesh network.
- **Headset:** allows gamers to talk to each other when plugged into the controller and connected to Xbox Live, and has an in-line volume control.
- **Universal Media Remote:** assists in the playing of DVD movies and music (although the console *can* play such media without the remote) , and offers controls for a TV or Windows XP Media Center Edition 2005-based PC. The universal media remote is a bigger version of the media remote that will initially be shipped with the premium version of the console. Both remotes allow basic control of games, along with being able to navigate the dashboard. The remote controls interface with the Xbox 360 via IR.

Hardware specifications

Central processing unit

The central processing unit (CPU), named **Xenon** (Microsoft) or **Waternoose** (IBM) is a custom IBM triple-core PowerPC-based design. [3]

- 90 nm process, 165 million transistors
- Three symmetrical cores, each one SMT-capable and clocked at 3.2 GHz
- One VMX-128 (IBM's branding for AltiVec) SIMD unit per core
- 128 × 128 register file for each VMX unit
- 1 MiB L2 cache (lockable by the GPU) running at half-speed (1.6 Ghz)

Graphics processing unit

The graphics processing unit (GPU) is a custom ATI R500-based "Xenos"

- 337 million transistors total

- 500 MHz parent GPU (90 nm process, 232 million transistors)
- 500 MHz 10 MB daughter embedded DRAM framebuffer (90 nm process, 105 million transistors)
    - NEC designed eDRAM has internal logic for color, alpha blending, Z/stencil buffering, and anti-aliasing.
- 48-way parallel floating-point dynamically-scheduled shader pipelines
    - 4 arithmetic logic units per pipe for vertex or pixel shader processing
    - Unified shader architecture (This means that each pipeline is capable of running either pixel or vertex shaders.)
    - Support for DirectX 9.0 Shader Model 3.0, limited support for future DirectX 10 shader models
    - 2 Shader operations per pipe per cycle
    - 96 Shader operations per cycle across the entire shader array
    - Shader performance: 48 billion (48,000 million) shader operations per second
- 16 Filtered & 16 unfiltered texture samples per clock
- Maximum polygon performance: 500 million triangles per second
- Pixel fillrate: 16 gigasamples per second fillrate using 4X multisample anti aliasing (MSAA)
- Dot product operations: 9.6 billion per second theoretical maximum, 33.6 billion per second theoretical maximum when summed with CPU operations.

Memory

- 512 MiB 700 MHz GDDR3 RAM (Total system memory is shared with the GPU via the unified memory architecture.)

System bandwidth

The system bandwidth comprises:

- 22.4 GB/s memory interface bus bandwidth (700 MHz × 2 accesses per clock cycle (one per edge) on a 128 bit bus)
- 256 GB/s eDRAM internal logic to eDRAM internal memory bandwidth
- 32 GB/s GPU to eDRAM bandwidth (2 GHz × 2 accesses per clock cycle on a 64 bit DDR bus)

- 21.6 GB/s front side bus (aggregated 10.8 GB/s upstream and downstream)
- 1 GB/s southbridge bandwidth (aggregated 500 MB/s upstream and downstream)

Overall System Floating-Point Performance

- 115 GFLOPS theoretical peak performance for CPU
- 1 TFLOPS theoretical peak performance of CPU and GPU combined

Audio

- All games support at least six channel (5.1) Dolby Digital surround sound
- Supports 48 kHz 16-bit audio
- 320 independent decompression channels
- 32 bit processing
- 256+ audio channels
- No voice echo to game players on the same Xbox console; voice goes only to remote consoles
- Voice communication except during games or applications that do not support voice.
- Uses XMA codec (advanced audio technology from Microsoft)

Video

VC-1 at non-HD NTSC and PAL resolutions
VC-1 or WMV will be used for streaming video
VC-1 supports DVD quality and high definition quality video
Bink Video is licensed for games like Project Gotham Racing 3
additional MPEG2 decoder for DVD video playback

DVD drive

A 12X DVD-ROM drive, capable of reading DVD+R/RW discs, is part of the console, with game titles shipping on single or dual-layer DVDs. The other supported formats are: CD-DA, CD-ROM, CD-R/RW, WMACD, MP3CD, and JPEG Photo CD.

It has been confirmed by Yoshihiro Maruyama, Japan's chief of Xbox operations, that Microsoft will never release games for Xbox 360 in a format other than DVD.

Bill Gates has confirmed during his keynote speech at CES 2006 that an external HD-DVD drive will be released for the 360 this year.[5] However, Peter Moore has stated that if HD-DVD loses the format war, Microsoft may release an external Blu-Ray drive

Xbox 360 games are set to the standard 7.95GiB of storage available on a dual-layer DVD. Due to the limited space of standard DVDs, some games made for the system may span multiple discs. The Nintendo Revolution will use a proprietary disc of similar capacity while the PlayStation 3 will have the ability to use 25GB or 50GB Blu-Ray Discs. The Blu-ray specifications have already been finalized in CES 2006.

Physical characteristics

- Weight 3.5 kg (7.7 lb)
- 30.9 cm (L) x 25.8 cm (W) x 8.3 cm (H) (12.15 x 10.15 x 3.27 in)

Miscellaneous

Support for WMV HD and progressive or interlaced DVD video playback.
Media Center Extender capability
The console makes use of regional lockout. Games bought for the console in a specific region can only be played in a console from the same region, though some games are region-free. DVD playback on the console has similar lockouts.
All games must support a 16:9 aspect ratio, and a minimum of 720p HD resolution with 2x full-scene anti-aliasing enabled. The GPU can downsample 720p to lower display resolutions (including 480i SDTV and 480p) and dynamically crop or scale 16:9 to fit 4:3 screens. Some games will optionally support native 1080i and 480p video resolutions as well.
3 USB 2.0 ports
Microsoft claims all games will support custom music. (This requirement may have profound effects on the business model for music video games.) There are several ways to utilize the custom soundtrack option: by ripping music from audio CD's, stream music directly from your PC (Windows Media Center Extender), plug in a USB Flash Drive, or plug in an MP3 player that is USB-capable (including any Apple iPod models which support USB or Sony PSP) into the system to use custom soundtracks. However, you can only store music on the system's hard drive by ripping your audio CDs.

Dashboard

The Dashboard is the main interface to the Xbox 360, governed by a series of "blades" to subdivide categories. The Dashboard will launch automaticially at boot if no game disc is inserted into the console. The Dashboard can also be accessed via the Xbox Guide button on the controller at any time to open a player specific blade. From there, the full Dashboard can be run, exiting the current game.

The main dashboard is divided into 4 main sections:

- **Xbox Live/MarketPlace**
    - *For downloading maps, patches etc. Online multiplayer and online communication*
- **Games**
    - *Information adds to your gamer card, for example what games collection you own and which you have played*
- **Media**
    - *Section for music, pictures and videos*
- **System**
    - *System information and Gamer Card*

Software development

During early development the Xbox 360 was referred to as "Xenon", "Xbox 2", and "Xbox Next".

XNA

In March 2004, Microsoft announced a new game development software strategy dubbed "XNA", which Microsoft claims would enable game studios to cut development times by up to a third if developing across multiple Microsoft platforms, by means of tools created with the increasing difficulty of programming for a machine with three processor cores in mind. The Xbox 360 game development will be centered around the XNA Studio game development platform. XNA Studio covers three areas: Content Creation, Production Processes and Game Technologies. XNA Studio will enable collaboration between content creators, programmers, management and QA staff to speed the game production process. Based on Microsoft's Visual Studio 2005 Team System, the XNA Studio is the Visual Studio for game development; an integrated, team-based development environment tailored for game production. XNA Studio will provide versions of key production tools such as asset management, defect tracking, project automation and work lists. These tools are designed to work together to automate common development tasks and present interfaces tailored to the different functions within the team. XNA Studio will allow team members to collaborate using familiar techniques and tools, even when elements of the team are distributed geographically, an increasing trend in game development. Microsoft believes that this will give developers more time to generate unique content and reduce time running the content process. To date, some developers have endorsed XNA Studio. For example, John Carmack stated at QuakeCon 2005 that the Xbox 360 had "the best development environment" he has seen for a console.

Procedural synthesis

For the Xbox 360, Microsoft has drawn on recent research in computer graphics to enable a new method for game programming. In traditional games, all content is statically stored and generally immutable; that is, textures, meshes, and other game content is stored on a storage medium. As complexity in each rises, the demand for storage rises as well. A newer approach to generating content is utilised for Xbox 360 titles, a method referred to by Microsoft as *procedural synthesis*. Procedural synthesis is an approach to generating game content via algorithms. For example, trees are one of the most complicated objects to render in a game, due to their organic complexity. A game with only one model for a tree will appear odd, as nature is far more random; the game loses some of its immersion as a result. Instead, a general recursive algorithm will generate the tree's model and textures, so that each tree looks different from the next, and do so with high efficiency. The Xbox 360's architecture was designed with this approach in mind.[7] When running procedural synthesis algorithms, one of the Xenon CPU's cores may "lock" a portion of the 1 MB shared L2 cache. When locked, a segment of cache no longer contains any prefetched instructions or data for the CPU, but is instead used as output space for the procedural synthesis thread. The Xenos GPU can then read directly from this locked cache space and render the procedurally generated objects. The rationale behind this design is that procedurally generated game content can be streamed directly from CPU to GPU, without incurring additional latency by being stored in system RAM as an intermediary step. The downside to this approach is that when part of the L2 cache is locked, there is even less data immediately available to keep the 3 symmetric cores in the Xenon CPU running at full efficiency (1 MB of shared L2 is already a rather small amount of cache for 3 symmetric cores to share, especially considering that the Xenon CPU does not support out-of-order execution to more efficiently use available clock cycles).

Procedural synthesis is also found outside of the Xbox 360 in the advanced freeware FPS game .kkrieger, where such techniques have reduced the size of the visually stunning game to a mere 96 kilobytes. Other interesting examples of procedural synthesis are shown in various demoscene demos. The Playstation 3 also has impressive procedural synthesis capabilities, but the technical implementation differs significantly.

Backward compatibility

The Xbox 360 achieves backwards compatibility through software emulation of the original Xbox hardware. [8] Games have minor graphical enhancements due being rended in 720p resolutions with Anti-Aliasing enabled. Some games have slightly improved draw distance, possibly due to the system's greater memory bandwith.

A hard drive is required to enable backwards compatibility. Hard drives purchased separately or as part of the console package will include a certain number of "emulation profiles" for games, including Halo and Halo 2. Updated emulation profiles can be obtained through Xbox live, by burning a CD with content downloaded from Xbox.com, or by ordering an update disc from Microsoft at a nominal fee.

The list of backward compatible games for the U.S. market was released on November 11, 2005 and is maintained at Xbox.com. Although the U.S. list includes over 200 games, fewer games are listed as backward compatible in the European markets. As of January 10, 2006, the Japanese Xbox site shows only 30

Microsoft states that they will be adding more emulation profiles as they become available, with the intended goal of making the entire Xbox library playable on the Xbox 360.

Xbox Live on the Xbox 360

With the launch of the Xbox 360, Microsoft's online gaming service, Xbox Live will go through a major upgrade adding a basic non-subscription service (Silver) to its already established premium subscription-based service (Gold). Xbox Live Silver is free of charge and allows users to create a profile, join on message boards, access to Microsoft's Xbox Live Arcade, and talk to other members. Silver members are not allowed to play any games online. Microsoft has also announced there will be trial weekends for Silver members to access the full features of Gold service temporarily.

Xbox Live Gold will have the same features as Silver plus online game playing capabilities and video conferencing. However, video conferencing will not be available when the console is first released. Microsoft has allowed for previous Xbox Live subscribers to maintain their profile information, buddy lists, and games history when they make the transition to Xbox Live Gold. To transition your account you have to sign up for a .net account on Xbox.com and link it with your gamer tag. Then when you turn on your 360 console you will be asked for your .net account and your information will transfer. An Xbox Live Gold account will cost $49.99 USD, £39.99 Pounds Sterling, €59.99 per year (or, in the UK, a 3-month Gold membership is available for £11.99).

Xbox Gamer Guide

The Xbox Game Guide is a tabbed user interface that can be accessed instantly by pressing the Guide Button on any Xbox 360 controller. It offers the following selections:

- Xbox Live
- Marketplace
- Favorites List
- Custom Playlists
- Friends Lists
- and others

Xbox Live Marketplace and Arcade

By far one of the most interesting features of the Xbox 360 Live is the capability to download arcade-style games through Xbox Live Arcade, as well as game demos and other content through Xbox Live Marketplace. While game demos and trailers are free, full versions of games must be purchased using a system called Microsoft Points. Points can be purchased directly through Live or via game cards sold at retails shops such as Target.

Marketing

The official unveiling of the system occurred on Thursday, May 12, 2005 on MTV in a program called MTV Presents: The Next Generation Xbox Revealed hosted by actor Elijah Wood with a musical performance by the band The Killers. The Xbox 360 was also featured on the cover of Time magazine's May 23, 2005 issue with Microsoft chairman Bill Gates holding up one of the units. In the article he says "It's perfect...The day Sony launches [the new PlayStation], and they walk right into Halo 3." Read more at wikiquote. Microsoft executive Robbie Bach later clarified this statement, saying "Philosophically the point Bill was trying to make is that we're not just going to ship and not have great stuff coming up."

The system, along with some playable games, were shown off at E3 2005. The demos were running on "Xbox 360 Alpha Development Kits" which were Apple PowerMac G5s, chosen due to the PowerPC processor architecture that the machine shares with the Xbox 360. Microsoft claims that most of the games were running at 25-30% of full capacity because they were not running on actual systems.

In October/November 2005, North American Target and Wal-Mart stores received kiosks to demonstrate games like Call of Duty 2 and Kameo: Elements of Power. In the first week of November, the Xbox 360 screen of death was reported. EB Games locations recieved the Xbox 360 kiosks in their stores just over a week prior to its release.

Viral advertising and alternate reality games

The promotional campaign for Xbox 360 began on March 14, 2005 with the opening of an alternate reality game called OurColony. Throughout March and April OurColony.net offered challenges to its community, rewarding solutions with cropped pictures of the console and game screenshots. On May 12 the ARG section of OurColony closed, visitors were instead greeted with a promotional video hosted by J. Allard.

OrigenXbox360.com was the next viral marketing campaign from Microsoft. Unveiled on September 27, 2005 the website, hosted by talking rabbits Boss and Didier offers visitors an opportunity to enter in various contests. The initial contest was a raffle that required participants to answer three trivia questions regarding the Xbox 360 for a chance to attend a promotional pre-launch event. New contests include a Halo 2 tournament and a competition to design a "Gamertile" (an avatar icon). Design for the website employs flash animation of a Bonsai tree and bland elevator music to create a serene environment that is punctuated by visually intense psychedelic episodes involving the host rabbits.

October 2005 saw the launch of "Hex168", another viral marketing campaign commissioned by Microsoft and executed by the Marden-Kane advertising agency. On October 13, 2005, members of the TeamXbox forums were directed to the Hex168.com website through mysterious messages posted by someone called "Lutz". [14] This website hosted a number of images that appeared to perpetuate obscure conspiracy theories, but sometimes contained obtuse references to Xbox 360. The campaign was later revealed to be a U.S. contest that offered participants a chance to win one of three hundred and sixty Xbox 360 console bundles six days before the official launch.

Console launch

United States and Canada

Prelaunch reports assume that Microsoft intentionally restricted supply, although there is no evidence to support this and Microsoft has said they are releasing all units into supply chains as quickly as possible . Evidence indicates that Microsoft launched with all consoles available at the time, and operating at maximum production capability (i.e. they did not withhold produced consoles). They did not, however, build up a sufficient supply of consoles to satisfy the entire demand at launch. This allowed them to launch several months earlier than would otherwise be possible, but also led to shortages.

Peter Moore, Microsoft corporate vice president, predicted that shipments will reach 10 million units worldwide by the end of 2006.

Immediately after the launch, reports about the new machine's technical glitches started coming out. Some reported the Xbox 360 crashing with errors, some reported the hard drive does not respond in certain situations while others report error messages during various games or unusually fast overheating.The manual contains warnings about not placing the Xbox 360 on soft surfaces or in enclosed spaces to avoid heating problems. Microsoft claims that these problems are to be expected on a large scale release for a console and the number of reports versus the number of consoles released was very minimal. Microsoft has stated that they will look into the reports and have offered assistance reachable by phone.

The high demand for the Xbox 360 led to some owners almost immediately re-selling their console for vastly inflated prices. eBay in particular was a popular location for such offers with thousands of consoles going up for auction, some selling for many times the original retail price. It was reported that 40,000 units appeared on eBay during the initial month of release, which would mean that 10% of the total supply was resold.

According to the NDP Group, 326,000 units were sold in November. A second batch of 300,000 units were shipped to North America in the week of December 18, 2005. Analysts believe Microsoft will not meet the original target of 2.75-3 million units sold in the first 90 days after launch. As of January 10, 2006, major online retailers remain sold-out of both Xbox 360 packages (including Amazon.com, circuitcity.com and buy.com).

In Canada, all 32,100 units available for launch were sold.

Europe

Microsoft confirmed that 300,000 units were available for the European launch, creating shortages as in North America. As before, thousands of Xbox 360 appeared on auction websites like eBay, selling for more than twice their retail price. The shortages led to some consumers criticising retailers (especially Amazon), and others attacking Microsoft itself for failing to fill demand. In turn, some retailers blamed Microsoft for failing to provide enough consoles in the Christmas period.

Microsoft stated that more units would arrive on the UK market during December but this ended up being only a handful of consoles to very few stores and certainly not enough to satisfy the demand.

A total of 15 games were available for launch, including critical hits Call of Duty 2, Project Gotham Racing 3 and Perfect Dark Zero.

Three games released on North America's launch day were missing from the European launch. They are: Ridge Racer 6, NBA 2K6, and NHL 2K6.

Japan

While other regions such as the United States or Europe enjoyed successful launches, sales in Japan have been a great disappointment so far with only 12,300 units sold during the fourth week of initial shipment (it has been estimated that 70,567 units have been sold in total by Jan. 1, 2006). Most considers this is mainly due to the other popular and prospective video game consoles like Nintendo DS, PlayStation Portable, or GBASP, all of which have sold far more than the Xbox 360. Some have also attributed this slow start to titles such as Dead or Alive 4 and Enchant Arm missing the launch date while others point to the marketing strategy that focused on selling the Xbox 360 as a fashionable item when customers were looking for an affordable or a high performance gaming console.

For his part, Famitsu Xbox 360 editor-in-chief Munetatsu Matsui pointed to DOA4's absence as the main factor behind the slow start. He even added information that over 60% of his readers had planned to buy the much anticipated Tecmo fighting game which is set for a December 29 release. The 2-day 62,135 sales figure of the Xbox 360 is a little past half of the 123,334 units of the old Xbox that Microsoft sold in the first 3 days in Japan in February 2002.

Matsui predicts however that the Xbox 360 will likely gain momentum coming into January 2006 when new titles come out which includes Ninety-Nine Nights.

Initial predictions were highly optimistic as the highest rating launch game reviewed by Famitsu, Namco's Ridge Racer 6, scored 35 out of 40 stars. Namco expects to sell 500,000 copies of Ridge Racer 6 in Japan. It should be noted that this number is roughly equal to the number of Xbox units sold in Japan by November of 2005. Microsoft Japan executive Yoshihiro Maruyama stated that he expects sales of Xbox 360 in Japan to hit one million units sometime next year. Maruyama is widely credited for attracting support from Japanese game developers.

To entice people into buying the Xbox 360 some retailers are offering discounts on the system if they sign up for a 2 year broadband contract, similar to cell phone deals in the US. On December 17, Rakuten's website announced a special five-day sale starting on December 22 selling 10 Xbox 360s at 24,900 yen

On the day of the launch, Capcom unveiled their Xbox 360-exclusive sci-fi game Lost Planet, which features South Korean actor Lee Byung Hun in the lead role.

Recent surveys in Japan have confirmed that the majority of Japanese 'gamers' are strong supporters of both Nintendo and Sony. Both Nintendo and Sony have a substantial amount of Japanese third party developers.

Technical Issues

Xbox 360 "Screen of Death"

The **Xbox 360 screen of death** (**X360SoD**) is an error screen displayed by the **Xbox 360** game console. It was discovered in Wal-Mart stores days before the official console launch. Microsoft placed kiosks for demonstration in some stores and the error began appearing. The error stops the console and requests that the player contact technical support.

The screen contains the text *"System error. Contact Xbox Customer Support."* in a variety of languages and the error code at the bottom.

Crashing

Since its initial release date, some Xbox 360 customers have complained that the 360 occasionally freezes, apparently due to overheating because of high environment temperatures or a limited airflow around the 360 (and as such the problem can be lessened by allowing a better airflow or cooler environment). Given the lack of independent statistics it is hard to say whether the 360 tendency to overheat is severe enough that it is to be considered a flaw in the product.

Microsoft claims that the amount of calls that they are receiving are "within expected numbers." The company claims that 3% or less of all consoles released worldwide have issues.

Disc Scratching

Since the release of the Xbox 360, a small number of users are complaining of heavily scratched and damaged DVDs caused by misuse of the Xbox 360. The actual problem comes from a user moving the Xbox 360 from its vertical position to its horizontal position and vice-versa while the system is playing a game. The spinning disc has a high angular velocity and when the console is rotated, angular momentum causes the disc inside the drive to warp, touching the drive's pickup-assembly and scratching the disc. This is why the instruction manual that comes with the unit specifically states not to move the Xbox while it is in operation. A video has been posted on the web which depicts a user tilting the Xbox 360 while in operation causing a loud scratching noise. Microsoft is unable to replace the scratched discs, however they are offering a free copy of Perfect Dark Zero (a Microsoft published game) as a replacement. There have been no reported scratched discs while leaving the unit stationary during gameplay. It is also possible however, that resurfacing may fix some of these discs as the disc shown in the video above does not show any signs of damage to the data layer.

Disc Playback Problems

Another problem many of the customers have been facing is disc playback problems. The Xbox 360's game information starts at the edges of the disc and the laser spins inwards because the information around the edges is the slowest read. Some DVD information is located around the center in case you insert it into a DVD player which instructs the user to "Insert the disc into an Xbox 360." The problem people face is that the Xbox 360 fails to read the game information and thus thinks the disc is a DVD and plays the DVD information instead. Ars Technica reports that DVD Movie playback has bugs and recommends not using Xbox 360 to play movies.

Power Supply

Although not a true technical issue, there is some criticism regarding the size and consumption of the power supply for the 360. A photo comparing the 360's power supply size next to a Nintendo Gamecube can be seen here: It draws 160 watts, over twice as much as the original Xbox (74 watts) and over three times as much as a PS2 (50 watts). It is notable that the processors within the Xbox 360 are considerably faster and more powerful than previous consoles which constitutes a higher power requirement, much like many of the new high-power gaming PCs. In comparison, the power draw of the 360 is greater than most home A/V equipment with the exception of bigscreen HDTVs

Red Light Patterns

Various issues occuring with the Xbox 360 system will cause various patterns of red lights to occur in place of the standard green Ring of Light.

The patterns are as follows:

4 Red Lights: The A/V cable is either not properly connected to the Xbox 360 system, or is not being detected.

3 Red Lights: The Xbox 360 system is experiencing a hardware failure. Some Xbox 360 system owners have reported that this is due to a low-power problem, and was fixed by allowing the Xbox 360 console its own power socket. This also occurs during a power loss such as a blown fuse, power outage or other power loss. Even when power is restored, if the console was on when it happened, the 3 red lights will show up. Just reset and continue playing.

2 Left Red Lights: The Xbox 360 system is overheating. The console needs to be placed in an area with better ventilation.

1 Red Light: Will usually come with the 'Contact Microsoft Support' error message, but either way it means a hardware failure. Users experiencing this error should contact Microsoft Technical Support

All four lights periodically flash green on the controller: The controller is not initialised by a device.

List of Solutions

As many errors as there seems to be with Xbox 360, there are also a number of ways around the problems as well. First, it is stated in the instruction manual to keep the 360 in a cooled environment away from dust and dirt. This is one of the major causes of overheating in the 360. It should be noted that one should not put the console on carpet or any soft area. Next, the large Power Supply Unit works best when it is off the ground. This (along with plugging the unit into a wall socket and NOT a surge protector) greatly reduces the risk of overheating on a console. Finally, one must never move their console at any time when it is active and has a disc inside. As stated before this will scratch your disc and few retailers are willing to replace them. Follow these steps and a majority of the problems will be avoided. Microsoft instructs users to call their customer service hotline which varies by region. Typically, they ship a box to the customer so they can have it repaired. Rubber padding can also prevent disc scratching. The pad restricts the upward movement of the disc on one side of the pivot point and in turn restricts the downward movement on the other side of the pivot point.

See also

- Xbox
-

References

1. Lewis, Peter (Nov. 28, 2005). "Let the Games Begin". *Fortune*, pp. 87–88.
2. ^ Brown, Jeffery (2005). "Application-customized CPU design." IBM developerWorks.

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Handheld Game Systems

A **handheld game console** is a lightweight, portable, electronic device for playing video games. Unlike video game consoles, however, the controls, screen and speakers are all part of a single unit. Throughout the 1970s and 1980s, several companies – including Coleco and Milton-Bradley – made lightweight table-top or handheld electronic game devices. Today, these machines aren't considered strictly consoles, since they often would only play a single game. The first true handheld game console with interchangeable cartridges was the Milton Bradley Microvision in 1979. Nintendo has dominated the handheld market since the release of the Game Boy in 1989, and is often credited as popularizing the handheld console concept.

History

Origins

The first handheld game console to use interchangeable game cartridges was the Microvision, designed by Smith Engineering, and distributed and sold by Milton-Bradley in 1979. A small screen, a small selection of games (only thirteen) led to its demise only two years later. Today, working Microvisions are quite rare. The keypad could be easily damaged and the LCD technology of the late 1970s was poor, leading to liquid crystal leaking and darkening. In 1984, Japanese company Epoch released their Game Pocket Computer. Despite decent reviews, the system failed.

Early 1990s

Nintendo Game Boy

Main articles: Game Boy

It wasn't until five years later that Nintendo released the Game Boy. The design team headed by Gumpei Yokoi had also been responsible for the Game & Watch system, as well as the Nintendo Entertainment System games Metroid and Kid Icarus. The Game Boy came under scrutiny by some industry critics, saying that the monochrome screen was too small, and the processing power was inadequate. The design team had felt that low initial cost and battery economy were more important concerns, and when compared to the Microvision, the Game Boy was a huge leap forward.

Yokoi recognized that the Game Boy needed a killer app – at least one game that would define the console, and persuade customers to buy it. In June 1988, Minoru Arakawa, CEO of Nintendo of America saw a demonstration of the game Tetris at a trade show. Nintendo purchased the rights for the game, and packaged it with the Game Boy system. It was almost an immediate hit. By the end of the year more than a million units were sold, and 25 million were sold by 1992. The original Game Boy (along with the Game Boy Pocket, Game Boy Color, and Game Boy Advance) is the best selling game console ever, having sold more than 190 million units.Some say that the Game Boy line had already reached more than 220 million units sold.

Although the Game Boy is by far the most successful handheld game system, there were a number of other systems made throughout the 1990s.

Atari Lynx

In 1987, Epyx created the Handy; a device that would turn into the Atari Lynx in 1989. It was the first color portable ever made, as well as the first with a backlit screen. It featured a color LCD screen with backlight, networking support with up to 17 other players, and advanced hardware that allowed the zooming and scaling of sprites. The Lynx could also be turned upside down to accommodate left-handed players. However, all these features came at a very high price point, which drove consumers to seek cheaper alternatives. The Lynx was also very unwieldy (due to focus groups requesting the machine be bigger so it felt like they "got their money's worth"), consumed batteries very quickly and lacked the third-party support of the alternatives. Due to a high price, short battery life, production shortages, a dearth of compelling games, and Nintendo's aggressive marketing campaign, and despite a redesign in 1991, the Lynx became a commercial failure

Sega Game Gear

In response to the Game Boy's success, work began on several handhelds that aimed to capitalize on what was seen to be the Game Boy's main weakness: inadequate graphic quality. The Sega Game Gear was released in late 1990, and featured a backlit color display, like the Lynx's. The Game Gear's internal architecture was almost identical to the Sega Master System console (the Game Gear had 4096 possible colors versus the Master System's 256), which allowed Sega to quickly release a large number of games that had originally been written for the older system. The Game Gear had the same drawbacks as the Lynx, however, and although it fared a bit better(aprox. 10 mil. units sold worldwide), it also failed to impact the Game Boy's dominance.

Several other attempts to compete with the Game Boy were made, such as the NEC TurboExpress, Supervision, and Neo Geo Pocket. Despite technologically superior hardware in almost all of these systems, especially by the mid-1990s, none were ever a close competitor to the Game Boy.

NEC TurboExpress

The **TurboExpress** was a portable version of the TurboGrafx, released in 1990 for $249.99 (the price was briefly raised to $299.99, soon dropped back to $249.99, and by 1992 it was $199.99). Its Japanese equivalent was the PC Engine GT.

It was the most advanced handheld of its time and could play all the TurboGrafx-16's games(which were on a small, credit-card sized media called HuCards). It had a 66 mm (2.6 in.) screen, the same as the original Game Boy, and could display 64 sprites at once, 16 per scanline, in 512 (some say only 482?) colors. It had 64 kilobytes of RAM. The Turbo ran its two 6820 CPUs at 3.58 MHz in parallel.

The optional "TurboVision" TV tuner included RCA audio/video input, allowing you to use TurboExpress as a video monitor. The "TurboLink" allowed two-player play. *Falcon*, a flight simulator, included a "head-to-head" dogfight mode that could only be accessed via TurboLink. However, very few TG-16 games offered co-op play modes especially designed with the TurboExpress in mind.

Neo-Geo Pocket

The **Neo Geo Pocket** was SNK's original hand held system. It was released in Japan in late 1998, and discontinued in 1999, with the advent of the Neo Geo Pocket Color, due to lower than expected sales with the Monochrome Neo Geo Pocket.

The system was only released within the Japanese and Hong Kong market. Even though it had a short life, there were some significant games released on the system such as Samurai Shodown, and King of Fighters R-1.

The Neo Geo Pocket can play many of the newer color games. There are, however, notable exceptions such as Sonic the Hedgehog Pocket Adventure or SNK vs. Capcom: Match Of The Millennium. Since the newer Neo Geo Pocket Color is fully backwards compatible, it does play all the Neo Geo Pocket cartridges.

Late 1990s

The Game Boy was nine years old before it got its first significant makeover. In 1998, the Game Boy Color was released. It used the smaller and lighter form-factor of the Game Boy Pocket, but featured a full color screen. It was also backwards-compatible, so that it could play not only games specifically made for the Game Boy Color, but standard Game Boy games as well. It did not have significantly more computing power than the Game Boy, however.

By this time, the lack of significant development in Nintendo's product line began allowing more advanced systems such as the Neo Geo Pocket Color and the Wonderswan Color to achieve moderate success.

Game Boy Color

The **Game Boy Color** (also referred to as **GBC)** is Nintendo's successor to the Game Boy and was released on October 21, 1998 in Japan and in November 1998 in the United States. It features a color screen, and is only slightly larger than the Game Boy Pocket. The processor is twice as fast as a Game Boy's, and has twice as much memory. It also had an infrared communications port for wireless linking which did not appear in later versions of the Game Boy, such as the Game Boy Advance.

The Game Boy Color was a response to pressure from game developers for a new system, as they felt that the Game Boy, even in its latest incarnation, the Game Boy Pocket, was insufficient. The resultant product was backward compatible, a first for a handheld console system, and leveraged the large library of games and great installed base of the predecessor system. This became a major feature of the Game Boy line, since it allowed each new launch to begin with a significantly larger library than any of its competitors.

The console was capable of showing up to 56 different colors simultaneously on screen from its palette of 32,768, and could add basic four-color shading to games that had been developed for the original Game Boy. It could also give the sprites and backgrounds separate colors, for a total of more than four colors. However, this resulted in graphic anomalies in certain games where a sprite that was supposed to meld into the background was now colored separate, giving it away.

Neo-Geo Pocket Color

The Neo Geo Pocket Color (or NGPC) was released in 1998 in Japan. It was a 16-bit color hand held game console designed by SNK, the makers of the Neo Geo home console and arcade machine. It came after SNK's original Neo Geo Pocket monochrome handheld, which debuted in 1998 in Japan (and was released in the USA in 1999).

In 2000 following SNK's purchase by Japanese Pachinko manufacturer Aruze, the Neo Geo Pocket Color was dropped from both the United States and European markets, purportedly due to commercial failure. Remaining stock was bought back by SNK for repackaging in Asia. Before SNK was bought out, the Neo Geo Pocket Color was being advertised on US television and units were being sold nationally in Wal-Mart, Best Buy, Toys "R" Us, and other large retail chains. In June 2000 SNK of America (and Europe) tried recalling most of the backstock of systems and games to be flashed and re-sold in Asia where the system would continue to be sold and supported. Some of the backstock of US NGPC hardware and software started showing up back on the marketplace in the US and Asia in 2003. These units frequently appear bundled with six games, and are readily available online, and are sometimes available in video game stores.

The system seemed well on its way to being a success in the US. Indeed, it enjoyed a greater success than any Game Boy competitor since Sega's Game Gear. However, it was hurt by several factors, such as the Neo Geo heads' legendary lack of communication with third-party developers, and anticipation of the Game Boy Advance. The decision to ship American games in cardboard boxes in a cost cutting move rather than the much loved hard plastic cases that Japanese and

European releases were shipped in may have also hurt the American sales.

Wonderswan Color

The **WonderSwan Color** is a **handheld game console** designed by Bandai. It was released on December 30, 2000 in Japan, and was a moderate success.

The original WonderSwan had only a black and white screen. Although the WonderSwan Color was slightly larger and heavier (7 mm and 2 g) compared to the original WonderSwan, the color version featured 512K of RAM and a larger color LCD screen. In addition, the WonderSwan Color is compatible with the original WonderSwan library of games.

Prior to WonderSwan's release, Nintendo had virtually a monopoly in the Japanese video game handheld market. After the release of the WonderSwan Color, Bandai took approximately 8% of the market share in Japan partly due to its low price of 6800 yen (approximately $65 U.S. Dollars).

Another reason for the WonderSwan's success in Japan was the fact that Bandai managed to get a deal with Squaresoft to port over the original Famicom Final Fantasy games with improved graphics and controls. However, with the popularity of the Game Boy Advance and the reconciliation between Squaresoft and Nintendo, the WonderSwan Color and its successor, the Swan Crystal quickly lost its competitive advantage.

2000s

Game Boy Advance

Main articles: Game Boy Advance

In 2001, Nintendo revealed the Game Boy Advance, which added two shoulder buttons, a larger screen, and more computing power. The design was further revised about two years later when the Game Boy Advance SP, a compact "clamshell" (folding open and closed, like a briefcase) version, was released. It also had a frontlit color display and rechargeable battery. Despite its smaller size, the screen remained the same size as that of the Game Boy Advance. The GBA also introduced the concept of "connectivity", using the Game Boy as a controller for the Nintendo GameCube. A handful of games use this feature, most notably Final Fantasy: Crystal Chronicles and The Legend of Zelda: The Wind Waker. As of 2005, there are three Game

Boy Advance models: Game Boy Advance, Game Boy Advance SP, and Game Boy Micro.The GBA,GBASP, and the Game Boy Micro had sold more than 70.04 million units sold worldwide so far.

Gamepark 32

The original GP32 was released in 2001 by the Korean company Gampark a few months after the launch of the Gameboy Advance. It featured a 32-bit CPU, 133 MHz processor, MP3 and Divx player, and e-book reader. The GP32 was redesigned in 2003. A front-lit screen was added and the new version was called GP32 FLU (Front Light Unit). In the summer of 2004 another redesign was made and this time a back-lit screen was added. It was called the GP32 BLU and it was the first redesign of the system officially released outside Korea (in Europe). Despite of the system's features it never had wide developer support which led to its demise.

Nokia N-Gage

Main articles: N-gage

In 2003, the Nokia N-Gage was released. It was designed as a combination mp3 player, cellphone, PDA, radio, and gaming device. The system received a lot of criticism on its physical design and layout, including its vertically oriented screen and requirement of removing the battery to change game cartridges. The most well known of these was "sidetalking", or the resultant effect of placing the phone speaker and receiver on a edge of the device instead of one of the flat sides. The N-Gage QD was later released to revise the design.

Tapwave Zodiac

In 2004, Tapwave released the Zodiac. It was designed to be a PDA-handheld game console hybrid. It supported photos, movies, music, Internet, and documents. It has the standard stuff any PDA comes with. Palm OS 5 hardware is compatible with the Zodiac. Two versions are available, differing in memory and looks. The Tapwave Zodiac was killed off in July of 2005.

Nintendo DS

Main articles: Nintendo DS

The Nintendo DS was released in November, 2004. Among its new features was the incorporation of two screens, as well as a touch screen and wireless connectivity with other devices. The Nintendo DS comes with Dual screens using LCD screening. "Two LCD screens offer one of the most groundbreaking gameplay advances ever developed." The lower screen allows touch sensitivity which helps create an interactive environment for the gamer. The Nintendo DS comes with a pen that you can use on the touch screen without damaging the screen. This device also allows the use of a microphone port. Wireless network is also another of the many features the DS has provided. The Local Wireless network can support 16 players. The wireless range can be 30 to 100 feet for some games. Gaming multiplayer may require one Multiplayer game card for each player, but newer games are taking advantage of the Nintendo DS "Download Play", which only requires one player to have a cartridge. Picto-Chat a way to draw and communicate with other users of the DS. The DS has a separate port for the loading of Game Boy Advance games in singleplayer. The Nintendo DS also features online capabilities with the Nintendo Wi-Fi Connection. The Nintendo DS has sold more than 13 million units worldwide in just over a year [2] and reigns over the Sony PSP in sales.

Sony PSP

Main articles: PlayStation Portable

Sony's PlayStation Portable was first revealed at E^3 2004, and was released in Japan and North America in late 2004 and early 2005, respectively. Like previous competitors to the Game Boy, the PSP is also considerably superior in both processing power and screen quality, but inferior in battery life, price, and durability. Unlike previous competitors (except possibly the peripheral-happy Game Gear), the PSP includes several unusual features beyond gaming. The Sony PSP ultimately is more powerful than the Nintendo DS but with a lack-luster game library, it has failed to compare to the portable video game giant, Nintendo, in quantity of console sales.

The PSP, as well as several other handhelds in this generation, is designed with an emphasis on convergence, partially to help differentiate themselves from Nintendo's game-focused offerings. Sony, for example, has trumpeted the PSP's ability to play movies and music from the system's UMD disks, or stored on a Memory Stick. Some of the games for the PSP, such as Wipeout Pure, can use the PSP's web features to download new content. The PSP isn't the only converged game system; Nokia's N-Gage (and its redesigned successor, the N-Gage QD), the Tapwave Zodiac, and the Tiger Telematics

Gizmondo include such unusual features as GSM cell phone functionality, GPRS cellular data networking, GPS receivers, PDA functionality, built-in digital cameras, and so on. To a lesser extent, the DS's unusual, albeit game-oriented, features or the movie-playing Play-Yan accessory for the DS and GBA SP could be seen as part of this trend. It remains to be seen if this trend towards convergence is unique to this generation, or if it survives into the next.

Tiger Telematics Gizmondo

Main articles: Gizmondo

Tiger's Gizmondo came out in the UK during March and it was released in the USA during October. It is designed to play music, movies, and games, have a camera for taking and storing photos, and have GPS funtions. It also has gyroscopic and Internet capabilities. It will have a phone for sending text, multimedia, and email and voice calls will come via a Bluetooth headset.

Gamepark Holdings GP2X

Released in November 2005, the GP2X is a handheld game console that uses the Linux operating system and is designed to support videos, music, photos, and games in an open architecture allowing any user to develop software for the device. Expandability for future upgrades (new media formats, features, operating system, etc) has been made possible by flash upgradable firmware.

The GP2X natively supports codecs and formats such as DivX, XviD, MP3 and Ogg Vorbis, but because of the player is based on the open-source media player named mplayer, it will be easily possible to add others non-supported at the launch. It is also expected to be able to emulate games for many systems, including the NES, SMS, PC Engine, SNES, and Sega Genesis. Actually, because GP2X units were sent to some developers before the official commercial launch, there are projects of some emulators, like a Neo Geo CD emulator ported to GP2X by a Korean developer.

List of handheld game consoles, notable features, and industry firsts

Main articles: Comparison of handheld gaming consoles

Milton Bradley Microvision (1979)
Nintendo Game & Watch (1980 - 1991) - Predecessor to Game Boy; is technically a handheld electronic game
Atari Cosmos (unreleased, developed in 1979)
Entex Adventure Vision (1982) First to have a monitor
Epoch Game Pocket Computer - (1984) - Japanese only; not a success
Nintendo Game Boy (1989) - First international commercial success
Atari Lynx (1989) - First backlit screen
NEC TurboExpress (1990, Japan; 1991, North America) - Played huCard (PC Engine/TurboGrafx-16) games, first console/handheld intercompatibility
Sega Game Gear (1991) - Architecturally similar to Sega Master System, notable accessory firsts include a TV tuner
Supervision (1992)
Sega Mega Jet (1992) - no screen, made for Japan Air Lines
Nintendo Virtual Boy (1994) - Monochromatic (red only) 3D goggle set, only semi-portable; first 3D portable
Sega Nomad (1995) - Played normal Sega Genesis cartridges, albeit at lower resolution
SNK Neo Geo Pocket (1996) - Unrelated to Neo Geo consoles or arcade systems save for name
Game Boy Pocket (1996) - Slimmer redesign of Game Boy
Tiger game.com (1997) - First touch screen, first internet support (with use of sold-separately modem)
Nintendo Game Boy Color (1998)
Cybiko (Around 1998)
SNK Neo Geo Pocket Color (1999)
Bandai WonderSwan (1999) - Developed by Gumpei Yokoi after leaving Nintendo
Bandai WonderSwan Color (2000)
Game Park GP32 (2001)
Nintendo Game Boy Advance (2001)
Bandai Swan Crystal (2002) - Minor redesign of WonderSwan Color
Nokia N-Gage (2003) - Game system and GSM cell phone (first combination of the two); first included mp3 player and FM radio; used Bluetooth (first wireless multiplayer); first use of GPRS for online play
Nintendo Game Boy Advance SP (2003) - Redesign of GBA: slimmer, clamshell form factor; frontlit screen
Timetop Gameking (2003)
Tapwave Zodiac (2004) - First PDA/game handheld hybrid; Palm OS PDA with game-focused form factor and features
Nokia N-Gage QD (2004) - Redesign of N-Gage, removed mp3 playback and radio
Nintendo DS (2004) - First inclusion of dual screens, built-in

microphone, and Wi-Fi for wireless multiplayer; touchscreen
Sony PSP (2004/2005) - First use of optical media; uses Memory Sticks for saved data; plays movies and music and views JPEG pictures.
Tiger Gizmondo (2005) - Uses GPRS network; first inclusion of GPS for location-based games, first built-in camera
Game Boy Micro (2005) - Redesign of GBA; smallest Game Boy form factor to date, first transflective LCD screen in a handheld.
Game Park XGP (2005) and Game Park Holdings GP2X (2005) - Successor units to the GP32 handheld, each being developed by the two companies that split off from Game Park.
V-Smile Pocket (2005) - handheld version of the V-Smile console. Specifically designed for education purposes.

See also

- Video game console

Home | Up | N-Gage | PlayStation Portable | Comparison of Handheld Gaming Consoles

N-Gage

The Nokia **N-Gage** is a mobile telephone and handheld game system based on the Nokia Series 60 platform. It was launched on October 7, 2003.

History

In the early 2000s, gamers were increasingly carrying around both a cell phone and a Game Boy, the most popular handheld game system. Nokia spotted an opportunity to combine these devices into a more handy unit. They developed and created the N-Gage, a device that included both. Instead of using cables, multiplayer was done with Bluetooth or the Internet (via the N-Gage Arena service). The N-Gage also included MP3 and Real Audio/Video playback and PDA-like features into the system.

The N-Gage has not been as commercially popular as Nokia estimated. The poor sales performance can be attributed to the poor selection of games compared its competitors and its cost at launch; it was more than twice as much as a Game Boy Advance SP.

Besides its gaming capabilities, the N-Gage is a Series 60 phone, running Symbian OS 6.1, with features similar to those of the Nokia 3650 (it does not have an integrated camera, however). It is able to run all Series 60 software, and Java MIDP applications as well. Its main CPU is an ARM Integrated (ARMI) compatible chip (ARM4T architecture) running at 104 MHz, the same as the Nokia 7650 and 3650 phones.

Devices

N-Gage

The original N-Gage was heavily criticized for its clumsy design: to insert a game, users must remove the phone's plastic cover and access the battery compartment. Also, the speaker is in the side edge of the phone, resulting in many gamers mocking it as talking into a "taco phone" or "sidetalking." Its comfort for longer calls has been criticized. The sidetalking is there for a practical reason: if placed elsewhere, the screen would get in contact with the cheek and become smudged. Despite the practicality (which was not apparent), gamers still were unwilling to talk in such an awkward manner.

In the gaming realm, the N-Gage was also criticized for its vertical screen and the poor selection of games.

In addition to its problems as a game system, it also faced problems as a cell phone. Besides the clumsy form factor, it was initially sold primarily through specialty game outlets instead of through cell phone providers, which only called attention to its high pre-subsidy price, lack of games, and clumsy interface compared to other gaming devices (thanks to the Series 60 interface and unusual face button layout). Once cellphone retail outlets started carrying the phone, which wouldn't become a widespread practice until well after the release of the N-Gage QD, it still faced problems. The N-Gage and its successor, the N-Gage QD, worked only on GSM networks, meaning that it was (and still is) incompatible with the then-largest US cell service provider, Verizon Wireless, as well as all of Japan's cell networks (which did much to cut off any significant Japanese developer support.)

The original N-Gage though still has many benefits to devleopers and end-users. It currently has the largest amount of executable RAM memory of any Series 60 device; it has MP3 decoding in a dedicated hardware chip (all other Series 60 devices, including the N-Gage QD, rely on software decoding); it has stereo output from a standard 2.5mm jack plug; and it can be mounted as a USB Mass Storage device on any compatible computer without requiring the Nokia PC Connect software.

N-Gage QD

The **N-Gage QD** is Nokia's successor to the N-Gage. It revises the device's physical design, being smaller and rounder, with a more convenient cartridge slot on the bottom of the device and the speaker and microphone on the flat side of the device so that calls may be made like a traditional phone. However, its rubber fitting side (that closes the gap between the device top and bottom casing) is easily loosened over a few months during normal use. Consequently, the device is more vulnerable to water or particles into the device internals unless a new fitting is replaced. The fitting is only available at the Nokia's service centers and is not sold on the retail market.

The device retails at a lower price, further aided by the fact that it is generally sold with a cell phone service contract and the corresponding subsidy. In the United States, the N-Gage QD currently is available as a prepaid phone offered by Cingular for $99.99 at retail games stores such as Electronics Boutique and GameStop.

MP3 playback, FM radio reception, and USB connectivity options have all been removed, presumably to cut size and cost. The QD does not support MP3 internally; however, it can still play MP3s with third-party software, albeit only in 16 kHz mono (For comparison, CD quality is 44 kHz stereo). The audio output is a Nokia mono earpiece (with microphone) instead.

Furthermore, the device graphical interface is mostly "Orange-and-grey" theme (Colors in all non-system applications unaffected), unlike the predecessor's colorful GUI. Nonetheless, there are some third-party softwares that enhance the interface or replace the System shell.

Instead of using the N-Gage with generic USB removable drive drivers, a user would use either Bluetooth or a separate MMC card reader to transfer files (for example, pictures, movies, or mp3s) onto an MMC card for use in the N-Gage QD.

The telephone portion no longer supports the three GSM frequency bands 900/1800/1900; instead it now comes in several dualband variants, one each for the American, European, and east Asian markets. (Each dualband variant comes in different colors, to aid in identification.)

The rest of the N-Gage QD hardware specification is otherwise the same as the original N-Gage.

N-Gage QD Silver Edition

Announced in August 2005, the N-Gage QD Silver Edition can be seen as an exercise in extending the life of the N-Gage product range while new N-Gage devices are developed and the integration into the mainstream Series 60 product range of the N-Gage gaming range happens. Apart from cosmetic changes, there is no difference in the N-Gage QD Silver Edition to the regular N-Gage QD.

It was made availabie in the European, Middle Eastern, and African markets on September 1, 2005.

Games

MMC Based Games

Demonstration Versions

Before the launch of Nokia's first in-house N-Gage title, Pathway to Glory, a one level demo of the game was released to journalists to allow them to sample the game, and understand the concepts behind the turn based wargame. This demo was subsequently placed on the N-Gage.com website as a free download. Undaunted by the 16mb download size, fans jumped on the Pathway to Glory demo. The success of this demo probably led to both the sales success of Pathway to Glory, and proved to Nokia that this was a valid marketing route for future titles.

As of November 2005, there are twelve N-Gage titles which have publicly available demonstration versions. These are:

Asphalt Urban GT
Colin McRae Rally 2005
Pathway to Glory
System Rush
Tom Clancy's Splinter Cell: Chaos Theory
Worms World Party
X-Men Legends
Catan
Rifts: Promise of Power
One
Asphalt Urban GT 2
Mile High Pinball

Snakes

Hailed as one of the best games on the N-Gage when released in

January 2005, Snakes saw Nokia take an innovative route to promoting the N-Gage platform. Likely spurred on by the success of the demonstration versions, the full version of Snakes was made available online. It also featured an option that allowed the game to copy itself to another N-Gage unit using bluetooth as the carrier.

Recent developments

As of September 2005, it is estimated that Nokia has shipped more than two and a half million N-Gage game decks. The "N-Gage" brand name still has a very poor reputation, due to the weakness of the system's first games and the original model's limitations. Many gamers are unaware of the later QD redeisgn and still consider the N-Gage as a joke. The situation has improved with the arrival of the PlayStation Portable and Nintendo DS handhelds. As of September 2005, Nokia has more than 50 games available for retail on the system, with at least 10 more expected up to and including Q1 2006.

While the N-Gage hasn't had any significant financial successes, it does have a handful of critical successes. Pocket Kingdom: 0wn the W0rld received a handful of glowing reviews when it was released, and Pathway to Glory is Nokia's first self-published success. These games haven't seemed to have had much effect in improving the perception of the N-Gage hardware itself in the eyes of consumers or press.

While the N-Gage QD hardware itself, sold unlocked and without a SIM card, has held steady at $250-300, the price with a contract in the US has continued to decrease. In the US, T-Mobile initially offered it for approximately $200 with contract, then sold it for between free and $150, depending on the promotions and contract. As of April 2005, the N-Gage QD retails for $99 at EB Games without the contract requirement.

In January 2005, UK sales-tracking firm ChartTrack dropped the N-Gage from its regular ELSPA chart, commenting that "The N-Gage chart, though still produced, is of little interest to anyone. Sales of the machine and its software have failed to make any impact on the market at all." Although only directly reflectant of the UK market, this was interpreted by some as a serious blow to the N-Gage as a viable gaming platform. Despite this, Nokia has reaffirmed their commitment to the N-Gage as a platform, to the point where a new version of the hardware was rumored after GDC 2005.

February 2005 saw Nokia appoint Gerard Wiener, formerly of Sega Europe, to the post of Director and General Manager for Games at Nokia. Wiener has steered Nokia away from looking at the N-Gage as primarily being a games console to "this is a mobile phone that is great for playing games on." This strategy, along with targeting niche franchises such as the table-top Warhammer 40,000 series, the Rifts RPG series, and the Settlers of Catan board game, has kept sales of the N-Gage healthy and given the platform a modicum of respect from some quarters of the media. It should be noted that this change coincided with the initial releases of the Sony PSP and Nintendo DS.

After E3 2005, Nokia announced their intention to make it possible to play unspecified certain N-Gage games on their next wave of smartphones. (At E3, games were demonstrated on the Nokia 3230, 6680, Nokia 6630, and N90, but Nokia has not yet announced what phones will be compatible with this as-of-yet unnamed service.) [1] These phones won't be compatible with the games sold on MMC in stores, but will be able to download games over the cellular network, or play games downloaded on your computer. All of the details of this scheme have not yet been stated, but this network/scheme should be in place sometime in 2006.

In July 2005, retailers began trying to clear out the N-Gage from their stores. Many game stores, such as EB Games and GameStop, have dropped prices for N-Gage games significantly. For the few stores that still have N-Gage games left, they are priced at $6.99.

In November 2005, Antti Vasara, Nokia's vice president for corporate strategy, stated that the N-Gage will be all but discontinued until at least 2007. "N-Gage is still being sold but it was not a success in the sense of developing a new category," he said. He also indicated that the gaming capabilities would be folded into the Nokia Series 60 phones and that the 2007 date was targeted as when screen size and quality would be more conducive to mobile gaming.

The system will continue to be sold in the Chinese and Indian markets.

See also

- Sony PSP

Home | Up

PlayStation Portable

PSP

Manufacturer

Sony

Type

Handheld game console

Generation

Seventh generation era

First available

December 12, 2004 (JP)

March 24, 2005 (NA)

1 September 2005 (EU, AU)

Media

UMD

Memory Stick

Online service

Wi-Fi

Ad-hoc

Top-selling game

The **PlayStation Portable** (officially **PSP**), a handheld game console, is a product of Sony Computer Entertainment. It is Sony's third installment in the successful PlayStation line of video game consoles and their first entry into handheld systems. The PSP was first announced during E^3 2003 and was unveiled on May 11, 2004 at a Sony press conference during E^3 2004.

Variations and accessories

In all territories the PSP is available as part of a **Value Pack**, and in most territories it is also available as part of a **Giga Pack**. (The standard pack is only available in Japan) The Value Pack contains the console, battery, a 32MB Memory Stick Duo, ear bud headphones with remote control, a slip-case, a wrist strap, and a Sampler Disc (in some territories), for USD $249.99, £180.00, ¥26,040 or AUD $399.00. The Giga Pack contains a console, battery, a 1GB Memory Stick Duo, headphones with remote control, a slip-case, a stand, and USB cable.

On July 21, 2005, Sony announced in an event in Tokyo, Japan that there would be a ceramic white version of the PSP that was released on September 15, 2005 in Japan and later released in South Korea. This PSP is the same as the black one, with the box, system and slip case now in white. This variation is unlikely to ever be released outside of Japan and South Korea.

On October 20, 2005, Sony announced the PSP Giga pack, which will contain a 1GB Memory Stick Pro Duo, a USB Cable, and a stand. It will also contain all of the other accessories found in the standard PSP Value Pack, except for the hand strap. The suggested retail price is ¥29,800 in Asia, $299 in North America, and £214.99 in the UK.

The Giga Pack was released in Japan on October 31, 2005, North America on November 3, 2005, and also released on 17th November 2005 in Europe.

Sales and competition

The PSP's major rival, the Nintendo DS, is considered to be in the same market as the PlayStation Portable (though representatives from both companies have stated that each system targets a different audience). Currently, the Nintendo DS is the leader in total worldwide unit sales with over 13 million units sold.

As of Friday October 21, 2005, the PSP had *shipped* 10 million units worldwide. These are only figures for the number of PSP units shipped to retailers, however. The figures are **not** for how many PSPs have actually been sold. Sony was expecting a large boost in sales by the end of the year with the creation of the PSP Giga Pack, which debuted at the start of the holiday season. By hitting 10 million units shipped in 10 months it marked the "fastest penetration speed" of any PlayStation platform.

SCEI has shipped the greatest number of PSPs in North America. Shipments there total 4.5 million units and are followed in the ranking by Asia, at 3 million, and then Europe, at 2.5 million, SCEI said. Note that these figures are PSP units shipped, not sold. It is estimated that Sony has sold 2.5 to 3 million PSP units in the US through to November. At CES Sony indicated it had sold 4 million PSPs to consumers in North America including December sales. It is estimated 2.6 million PSP units have been sold in Japan through to 2006 via the Media Create tracking service. Since its launch in September the PSP sold 610,000 through to December 10th in the UK, with the UK having "performed better than any other European territory"

Some analysts have estimated that PSP has sold in the region of 8 to 10 million units worldwide. Though this number is impressive it currently trails the Nintendo DS which has sold 13.4million units.

Features

Games

The PSP's inputs are geared for gaming rather than multimedia, with two shoulder buttons (triggers), the iconic PlayStation face buttons, (), start and select buttons, a digital 4-directional pad, and an analog input. There is also a row of secondary controls along the underside of the screen, for controlling volume, music settings (either switching the audio off and on in games or selecting different equalizer presets in the OS), screen brightness, accessing the system's main menu, as well as the standard Start and Select buttons. The UMD disks are small enough to fit comfortably in a pocket, and superficially similar to Sony's earlier product, the MiniDisc, but for the lack of a protective shutter and slightly different cartridge shape.

The PSP's analog input, often called the "analog nub," is not a traditional analog stick, but rather a sliding flat panel. Its odd placement initially led to speculation that it was a speaker. Concerns existed regarding the practicality of the input (its position requires a slightly asymmetrical grip on the unit to adequately use, with the left hand being lower than the right). While it is used in the same way as the analog thumb stick of a modern console, the resistance springs are calibrated differently: They are softer, making quick, coarse adjustments a bit easier, but fine-grained ones a bit more difficult.

The graphics and audio capabilities of the PSP lie somewhere between those of the original PlayStation and the PlayStation 2. While most of the available games are less complex than games available on PS2, the graphics nonetheless tend to be much closer in quality to the PS2 than the PS1. This is probably in large part due to the small size of the screen, combined with the fact that unlike the PS1, the PSP's graphics chip performs texture filtering.

UMD movies

Because of the UMD's relatively large storage space (1.8 gigabytes) and the PSP's large display screen, some film studios have released feature films in the UMD format with pricing comparable to DVD videos. Companies releasing UMD movies (or will release) include Disney, Warner Bros. Pictures, Twentieth Century Fox, Lions Gate Entertainment, Sony Pictures, New Line Cinema, Paramount Pictures, DreamWorks Pictures, and Anchor Bay Entertainment. Anime companies, such as Bandai, Geneon, FUNimation, and Viz Media are planning to release anime series, such as Samurai Champloo, Trigun, and Gungrave, and movies, such as Gundam Wing: Endless Waltz, the Ah! My Goddess movie, and Ghost in the Shell.

Most releases provide alternate audio languages and content, subtitles, and special features. (Japanese releases have been somewhat more eclectic, and include UMD/DVD combination packs and pornography.) On June 22, 2005, Sony confirmed that both House of Flying Daggers and Resident Evil: Apocalypse have both sold more than 100,000 copies each.

Movies on UMD were first made available in April 2005. The initial North American releases included House of Flying Daggers, xXx, Hellboy, Once Upon a Time in Mexico, Spider-Man 2, and Resident Evil: Apocalypse from Sony Pictures, along with Kill Bill: Volume 1 and Kill Bill Volume 2 (Miramax) and Pirates of the Caribbean from Disney Pictures.

Because the UMDs cannot be played on a television via some output cable, because Universal Studios was late among major American motion picture studios to commit to the UMD format, and because few G-rated titles are available in the format, UMDs have been criticized for not truly being "universal." As in many other shortcomings, a third-party hack can allow the PSP to display on a TV set, however using this hack involves removing the faceplate of the

PSP. Additionally, due to the smaller size of the UMD, special features that are on the DVD equivalents are usually cut out.

Multimedia and codecs

- Audio
    - MP3
    - ATRAC3
    - WMA (requires firmware v2.6 and acceptance of licence agreement to activate WMA playback capability)
    - WAV (Linear PCM)
    - MP4 (Container format)
        - AAC

- Video
    - MPEG-4
        - MPEG-4 Part 2
        - MPEG-4 Part 10

- Images
    - JPEG
    - GIF
    - BMP
    - TIF
    - PNG

The PSP is capable of displaying still image, movie, and audio files stored on the UMD disk format or a memory stick. The system supports MP3 and Sony's ATRAC3 plus formats for audio, MPEG-4 for video on UMD discs, and JPEG images. The PSP also has the capability to decode MPEG-4 Part 2 and MPEG-4 Part 3 from the *.mp4 container, if located on the Memory Stick. The file(s) must be placed in the **/MP_ROOT/100MNV01** directory on the Memory Stick, and be named in the following format: **M4V#####.MP4** (where "#" is any digit). Since firmware version 2.00, users can upload movies with the AVC codec, by putting them in the **/MP_ROOT/100ANV01** Folder, and named as **MAQ#####.MP4**. A corresponding thumbnail image file (160x120 pixel JPEG files renamed with the .THM extension) with the same file name (besides the extension) of the movie file can optionally be placed in the same directory. Unlike UMD movies, resolution of movies on a memory stick is limited to 76800 pixels (width*height, 320*240, 368*208, 480*160, etc), resulting in lower quality movies than UMD movies.

Sony has announced that *Image Converter 2*, a piece of PC software for converting video files to AVC for playback on CLIÉ PDAs, will be available before the end of the year, and may be used with the PSP. A preview version was made available shortly after the PSP launch. It can convert *.avi, MPEG1/2/4, QuickTime and *.wmv movie files to AVC, as well as the "Giga Pocket" and "Do VAIO" files used by VAIO PCs to record television. It will also convert most common still image files into JPEG format. Sony's SonicStage software can be used to copy `*.mp3` and ATRAC files to the PSP as well.

Sony's software is not the only toolset for getting music or movies onto a PSP, however. A cottage industry has grown around offering useful tools for converting and copying files for use on the PSP. Some popular alternatives include Media Boss for PSP, PSP Movie Creator, PSP Video Express, Xcopy9, PSPWare, iPSP, Mobile Media Maker, PSP Video 9, 3GP Converter and PSP Multimedia Extender all simplify the task of converting and transferring files to and from the PSP's Memory Stick. Additionally, some FOSS programs, such as FFmpeg can be used to convert video into a properly sized and formatted PSP video file. Using these tools, nearly any digital video file (including movie files ripped from DVDs or digital video recorders like the TiVo) can be played on a PSP, after conversion to AVC.

Video file sizes largely depend on the audio and video bit rates. With reasonable settings (a resolution of 320x240, a video bit rate of 500 Kilobits per second, and an audio sampling rate of 22050 kHz) a 22 minute movie file is roughly 55 megabytes. (This is enough for a 30 minute television episode with the commercials removed) This means that a 512 MB Memory Stick can hold approximately nine of these files. A hundred-minute feature film can fit on a 256 MB Memory Stick.

Many movie files, both free-to-distribute and pirated, have been encoded for the PSP and are available on the internet. Game and movie trailers, in particular, are increasingly available, even from the studio's official site.

Sony released firmware update version 2.0 on July 27, 2005 in Japan and on August 24, 2005 in North America. It was also packaged in the retail product for European and Australian PSPs. The firmware upgrade added the ability to play MP4 AAC audio files, ATRAC3plus audio files from a Memory Stick Pro Duo, MPEG-4 AVC video files, as well as view GIF, Bitmap (BMP), and TIF image files. It also added the ability to send photos wirelessly to another PSP system and allowed owners to use an image as background wallpaper. It also added support for WPA-PSK wireless encryption.

On October 3, 2005, firmware **version 2.01** was released. This upgrade fixed the image overload buffer problem that allowed the PSP to be "downgraded" via a homebrew hack. After the 2.01 firmware version SONY released the new **2.50**. Speculation states 2.50 was launched to attract users to upgrade: blocking any possible means of homebrew. It also included the LocationFree Player. If owners own a LocationFree Base Station at home, they can play streaming movies, over the Internet, from anywhere in the world, on their PSP. Also added were the Korean character set, the ability to play copyrighted movies, form history on the web browser, and time and date synchronization via the internet. Recently the **2.60** update has been released, the main features include streaming of podcast audio directly from the web using an RSS feed; and also playback of the WMA audio format (this requires online activation).

Wireless networking

Wi-Fi(IEEE 802.11b) support allows the PSP to connect to wireless networks, other PSP units for multiplayer gaming, the Internet, and Sony's upcoming PlayStation 3. As the PS3 has only recently been unveiled, details on link-up features are slim, however Hideo Kojima has discussed the possibility of a link-up between Metal Gear Solid 4 and Metal Gear Ac!d 2. Use of wireless network features increases the power consumption and lowers the battery life of the system.

A version 2.0 firmware update was released on July 27, 2005 for Japanese PSPs, and August 24, 2005 for North American PSPs. The update included a web browser and support for connecting to networks with Wi-Fi Protected Access (WPA) encryption.

Gamesharing

As the Nintendo DS does with its DS Download Play, the PSP allows one user to share their game with a third party, usually—but not necessarily—as a precursor to multiplayer gaming. A self-contained version of the game being shared is sent to the remote PSP over the wireless network, whereupon it boots and runs as though loaded from a UMD disc. Such 'Gameshare versions' of software usually have their featureset reduced and are intended, for example, to allow the multiplayer aspects of the software to be used while holding back single player or bonus functionality. First party European titles Fired Up and Wipeout Pure both shipped with Gamesharing features; subsequent titles have followed suit.

Ad-hoc networks

Ad-hoc wireless networking allows for up to 16 PSPs within range of each other to communicate directly, typically for multiplayer gaming. The launch titles Ridge Racer and Lumines, for example, support this. One unit can act as the host for a game, which is available to other PSP units within that systems range, and appears in a list when the client PSP searches for available hosts. Hosting a game in this manner increases power consumption and reduces battery life slightly. With the update of 2.0 or higher the PSP can use the Ad-Hoc technology to send pictures from one PSP to the other.

Infrastructure networks

The PSP's main menu allows the user to configure the system for use across the Internet via a wireless connection, known as infrastructure mode. The PSP's menu can recognize protected and non-protected wireless networks within its range, and attempt to request a firmware update from Sony's servers.

A handful of titles, including sixteen U.S. launch games (Including the multi-million selling game, SOCOM: U.S. Navy Seals) and an as-of-yet untitled MMORPG, have been announced which use this wireless network functionality. Packet tunneling systems are in development by third-parties which allow any Wi-fi game to operate across the Internet.

Use of infrastructure networks in PSP software began with a small number of titles at the US launch, supporting online play. South Korean PSPs will ship with software providing web browsing and multimedia streaming features, but only through company-owned Wi-Fi hotspots, and with a monthly fee

Infrared

The PSP features an IrDA port located on the top left of the device; however this is not currently used by any games.

However, there are homebrew applications which use PSP as a TV remote controller, such as PSP IR Remote.

Design and specifications

Technical specifications

The PlayStation Portable (PSP) was designed by Shi Ogasawara [Ÿ] for the Sony Computer Entertainment company.

The unit measures 170 mm (6.7 in) in length, 74 mm (2.9 in) in width, and 23 mm (0.9 in) in depth, and weighs 280g / .62 lbs (including battery). The most noticeable element of the PSP is its 110 mm/4.3" (diagonal) 16:9 ratio TFT LCD screen sporting a 480 x 272 pixel resolution capable of 16.77 million colours.

The PlayStation Portable's CPU is a MIPS 4KE or 24KE series (128-bit MIPS32R2 architecture) CPU, split into two cores each operating between 1 and 333 MHz. During the GDC, Sony revealed that it has currently capped the PSP's CPU at 222, apparently in an attempt to lengthen battery life. It has been speculated that this was one of the reasons for the cap, because this speed cap was listed on the 'Power Management Features' slide. Overheating concerns have also been cited as a possible reason for the cap, and gaming site Gamesradar has said this is the "most logical reason for the processor capping." The cap is programmed into all games and is not capped through the firmware as previously believed. This is not true as it has been hacked in a homebrew kit for GTA liberty city stories which allows for 333MHz mode, but this carries the risk of burning the CPU out and cuts battery life by more than half, yet on firmware 2.60 it's unable for the GTA homebrew kit to turn the PSP on to the 333MHz mode meaning it is possible that it is the firmware that is capped. The primary CPU core is responsible for traditional game processor functions; the secondary core, dubbed the "Virtual Media Engine," is responsible for decoding multimedia, for example the H.264 decoder.

The system has 32 MB of main RAM and 4 MB of embedded DRAM. There is no memory management unit for the CPU. No evidence of a TLB has been found to date. The Coprocessor 0 that normally manages the TLB-based MMU seems to be a custom effort by Sony. It doesn't have integrated memory.

The independent 166 MHz 90 nm graphics chip sports 2MB embedded memory and through its 512 bit interface it provides hardware polygon and NURBS rendering, hardware directional lighting, clipping, environment projection and texture mapping, texture compression and tessellation, fogging, alpha blending, depth and stencil tests, vertex blending for morphing effects, and dithering, all in 16 or 32 bit colour, along with handling image output. Specifications state that the PSP is capable of rendering 33 million flat-shaded polygons per second, with a 664 million pixel per second fill rate

Unlike Sony's PlayStation 2 console, the GPU (PS2 Vector Unit equivalent) is not programmable, meaning that many effects that the PS2 can resolve in hardware must be implemented in software on the PSP. Nonetheless, the implementation of a GPU in the PSP is still a significant technological advance, in that it implements robust hardware-rendering for 3D graphics in the handheld market. The PSP was preceded in this regard by Nokia's N-Gage in 2003, the Nintendo DS and Tapwave Zodiac in 2004.

Power

The PSP uses a rechargeable lithium-ion battery for power (an AC adaptor is included for charging and running from the mains). The system's manual states that the PSP is capable of three to six hours of gameplay, depending on the screen brightness or volume level selected.

Battery life is heavily dependent on the game chosen; technically simpler games such as Lumines tend to extend the battery life of the system, with graphically advanced games (or games that frequently access the UMD drive) such as Grand Theft Auto: Liberty City Stories tending toward shorter battery life. Ken Kutaragi, president of Sony Computer Entertainment, has compared the system to the Walkman, in that battery life will be improved with each product revision, and has outlined some steps (switching to a different fabrication process, for example) which will be used to improve the system's endurance. Currently the PSP's CPU is fabricated using a 90-nm process, but eventually Sony will shift to 65-nm and 45-nm when the technology becomes available.

In practice, tests using *Ridge Racer* have given between three and a half and slightly less than six hours of continuous gameplay, depending on screen brightness and volume. In one test, this dropped to approximately two and three quarter hours when using Wi-Fi multiplayer continuously. The system is capable of approximately ten hours of MP3 playback from memory stick on a full charge and around half this for AVC playback. While full-length movie UMDs were not available for this test, a repeating loop of the demo UMD bundled in the Value Pack provided a little over four hours of playback on a full charge.

The PSP's battery is removable for replacement by the end-user. One is thus able to purchase extra batteries as an accessory; at the Japanese launch, they cost ¥5,040 including tax (around US$47, €37, £26, AU$62). A Sony high speed charger is available as an optional accessory. There is also a variety of third party batteries that have more than twice the battery life compared to the standard Sony battery. Additionally, in late 2005, Sony released a battery that has a 20% higher charge capacity. It is available in Japan, the US and Europe.

The system ships with a multivoltage power supply for recharging the battery, allowing it to be charged in any country with the appropriate power lead. This multivoltage power supply is internally and externally similar to but not compatible with similar ones used with Sony's CLIÉ PDAs, and the power lead is a standard figure-of-eight cable similar to the power cable used with the PlayStation and PlayStation 2. The PSU itself is about the same size as a deck of cards.

A number of companies are now offering other chargers for the device. These are typically either USB charging cables that allow the PSP to charge from any PC with a USB port or are simply a series of AA batteries with a voltage regulator. These are similar in concept to the cheap battery life extenders available for mobile telephones.

Interface

The PSP's main menu interface is the XMB ("Cross Media Bar") used by recent Sony TVs and the PSX hardware. It consists of a horizontal sequence of icons (Settings, Photo, Music, Video, Games, Network (added in 2.0; for now only features the tab-supported web browser and the LocationFree Player; 2.60 brought "RSS Reader" to the Network tab, which allows users to stream RSS 2.0 (audio) feeds through the Internet.)) which when highlighted show a vertical sequence of sub-icons (for example, selecting Games allows the memory stick or a UMD to be selected).

The main menu system allows the user to, amongst other things, adjust settings such as date, time, and the PSP's nickname for wireless networking, play video or audio files from the memory stick, load games or movie UMDs, check on estimated battery life, and set the PSP into a "link mode" which makes the inserted memory stick available to a PC via USB. The OS may be accessed at any time in a game by pressing the "Home" button on the console.

Upon release, the default background color changed depending on the current month of the year, as follows:

- January – White
- February – Yellow
- March – Green
- April – Pink
- May – Dark Green
- June – Purple
- July – Aqua
- August – Sky Blue/Blue/Dark Blue
- September – Violet
- October – Gold
- November – Light Brown
- December – Red

Firmware 2.0 and greater allow one choose a color theme, or specify a wallpaper. For older versions of firmware there exist homebrew programs, such as PSPSet or PSPPersonalise, which allow changing the PSP's background.

User skins can also be made available through downloads or by game publishers within their game discs.

Firmware

The PSP's firmware is updatable via Wi-Fi infrastructure connection to a Sony server, by downloading the update application with a PC and transferring to the PSP via USB, or from a UMD disk (allowing games to update the firmware automatically). While firmware updates can be used with PSPs from any region, Sony recommends only downloading firmware updates released for the corresponding region. The current firmware version is 2.60. Various updates have included WPA-PSK encryption; a built-in web browser; the ability to stream audio using RSS; Location Free player (the PlayStation 3 will have this function built into it), keyboard input mode for Web input; AVC video playback from memory stick; audio switch function and 4:3 mode for memory stick video; GIF, BMP, PNG, and TIFF image viewing; AAC, ATRAC3plus, WAV and WMA audio playback from memory stick; wallpaper function; an image sharing feature; region-free streaming television and higher security for a recently discovered exploit in the Photo menu. Version 2.0 of the firmware was supplied on the demo disk inside the box of European PSPs, with version 1.52 preinstalled on the unit. (Some European PSPs had version 2.0 on the demo disc, but came preinstalled with version 1.0.) *See External Links for Firmware Release ChangeLogs

Region locking

The PSP supports region locking for games and movies, which limits which software may be played on each region's hardware. This scheme is based on the DVD CCA's DVD regional lockout scheme; Japanese PSP hardware already has a R2 logo on its box. However, support for regional lockout does not necessarily mean it will be used for all software. Sony has recently stated that PSP games will be region free while UMD Movies are region locked.

Games for the PSP are currently being encoded as region-free, and an official Sony statement states that this will continue indefinitely. There will be no limitation as to which country's handheld can play which country's version of the game. This follows the lead that

Nintendo started with their GameBoy line, leaving open the "portability" of the handheld, as well as enabling gamers who want to buy a PSP game while visiting another country will still be able to play it on their native PSP's.

Movies, on the other hand, are usually region-locked. There are ways around the region protection through such programs as UMD Emulator (currently this is only possible through firmwares V1.00 and V1.50). It should also be noted that, despite what many websites say, Region 1 PSPs are capable of playing Region 2 and Region 4 UMD movies, and Region 2 PSPs are capable of playing Region 4 UMD movies (except the Region 4 version of *Be Cool* for an unknown reason). Note: however at least some region 1 PSP's with V.1.5 canNOT play region 2 (European) movies. Probably there is a difference between the Japanese and European region 2 settings.

However, multiplayer compatibility across regions is not preserved. A Japanese version of a game cannot be played against an American or European version of the same game. For example, a user running the Japanese version of Ridge Racer cannot play (via wireless) with another user running the UK version of Ridge Racer. Similar cases also applied to the game Coded Arms.

Launches

The PlayStation Portable was first introduced to the public at the Tokyo Game Show 2004 (see: http://www.eurotechnology.com/tokyogameshow2004/) and released on December 12, 2004 in Japan. It was later released in North America on March 24, 2005 and in South Korea on May 2, 2005. Ten days later this was followed by a joint launch in Singapore, Hong Kong and Taiwan on May 12, 2005.

The European and Oceanian launch took place on 1st September 2005. Sony Computer Entertainment Europe had delayed the launch date originally set for March to meet demand from other regions. This resulted in PSPs being imported without authorisation, from Japan and the United States into Europe.

Sony Europe took legal action against small importers in the UK citing trademark infringement. One such importer, Electricbirdland Ltd., claimed they had sold several PSP consoles to SCEE staff; they were subsequently singled out and taken to court. UK is the only European country in which Sony has taken any form of legal action against importers of the PSP prior to its European release.

Homebrew development

In May 2005, it was found that PSPs using the 1.00 version of the firmware (meaning original, first launch US and Japanese PSPs) could execute unsigned code. What this meant in practice was that these PSPs could run homebrew software, as the mechanism for checking to make sure that software has been approved by Sony hadn't yet been activated. Later exploits have allowed for PSPs using version 1.50 of the firmware to run homebrew software nearly transparently. Using a buffer overflow exploit, it's possible to install 1.50 firmware onto a 2.0 firmware PSP, thus downgrading it and allowing for the execution of unsigned code. However there are limitations with running homebrew on 2.0 being programs will be run in user mode and not kernel mode. Recently, an exploit, for firmware version 2.5, was found in the game Grand Theft Auto: Liberty City Stories that allows homebrew code to be run from a save game file when loaded into the game. This exploit now works on firmware version 2.60 also.

To help buyers be aware of what version they are getting, there's a letter near the bar code on the PSP merchandise box. Each letter corresponds to which version it represents. For the value pack in the U.S., A is 1.5. B is 1.51. C is 1.52. D is 2.00(unconfirmed). Letter varies to the version depends on the country.

See also

- Comparison of handheld gaming consoles
- History of video games

Other current handhelds

- Game Boy Advance SP
- Game Boy Micro
- Gizmondo
- Nintendo DS
-

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Comparison of Handheld Gaming Consoles

References

Herman, Leonard (2001). Phoenix: The Rise and Fall of Video Games, Springfield, NJ: Rolenta Press. 0-9643848-5-X.

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Multiplayer

Multiplayer is a mode of play for computer and video games in which multiple people can play the same game at the same time. Unlike most other games, computer and video games are often single-player activities because the computing power exists to create artificial opponents.

In most multiplayer games, players compete against each other in a test of skill. There are some games in which players ally to achieve a common goal, and in others, groups of players form teams which fight as a group.

Usually multiplayer games either use computer networking to allow players to play together or require the players to gather around a single game system to play.

Networked

In modern computer games, the word multiplayer usually implies that the players play together by connecting multiple computers via a network, usually either a LAN or the Internet. This form of multiplayer is sometimes called "netplay" to refine the meaning. Networked multiplayer games tend to be most enjoyable when played on a LAN because it essentially eliminates problems common in Internet play, such as lag and rude, anonymous players. As a result, multiplayer games usually are the focus of LAN parties. Play-by-email games are multiplayer games that use email as the method of communication between computers.

Some online games are "massively multiplayer" games, which means that a large number of players participate simultaneously. The two major genres are MMORPG (massively multiplayer online role-playing game) such as Ultima Online or EverQuest and MMORTS (massively multiplayer online real-time strategy).

Some networked multiplayer games do not even feature a single-player mode. For example, MUDs and massively multiplayer online games are multiplayer games by definition. First-person shooters have become very popular multiplayer games and games like *Battlefield 1942* and Counter-Strike gained their fame despite not featuring extensive (or any) single-player plot or gameplay.

Notable multiplayer games in which each player uses a different display include:

Both incarnations of Neverwinter Nights, the AOL MMORPG and the BioWare version
The Doom series and Quake series by id Software
The Warcraft series and StarCraft by Blizzard Entertainment
Any number of card games played on gaming web sites

This category of games currently requires multiple machines to connect to each other over the Internet, but before the Internet became popular, MUDs were played on time-sharing computer systems, and games such as *Doom* were played on a LAN. Spacewar, created in 1962 for the PDP-1, is credited with being the first multiplayer computer game.

Gamers often refer to latency by the term ping, which measures round-trip network communication delays (by the use of ICMP packets). For example, a player on a DSL connection with a 50 ms "ping" will be able to react faster to game events than a modem user with 350 ms average latency. Another popular complaint is packet loss and choke, which can render a player unable to "register" their actions with the server. In first-person shooters, this problem usually manifests itself in the problem of bullets appearing to hit the enemy, but the enemy taking no damage. Note that the player's connection is not the only factor; the entire network path to the server is relevant, and some servers are slower than others. While latency is frequently complained about, lack of finesse and decent tactics is probably more lethal than a slow connection in most games. Major and frequent variations in latency, however, can be another story; these can make it very difficult to properly play the game.

Recently, games consoles have also begun to support network gaming, over both the internet and LANs. Many mobile phones and handheld consoles also offer wireless gaming through bluetooth or similar technologies.

Online cheating

For details, see cheating in online games

As in most games, some players choose to cheat to gain an advantage in online multiplayer games. Often this is done by exploiting bugs or design limitations in the software. Games companies try to prevent cheating in a number of ways. Technologically, they use software such as PunkBuster which continually verifies that the game being played is unaltered. Socially, games companies can demand a subscription fee for access to the game network which is non-refundable, so they can effectively fine cheats for cheating.

Even with the use of anti-cheat software, the FPS games are notorious for having the most cheats, which can sometimes turn people away from that type of game. This may be due in part because both clients and servers are run on private systems instead of on company owned servers.

Single-system

In modern console games and arcade games, the term multiplayer usually implies that the players play together by using several controllers plugged into the game system and hooked up to a single television monitor. For home console games, developers usually use split-screen so that each player can have an individual viewpoint on the action (important for genres such as the first person shooter), although most arcade games and some console games (ranging from the seminal Pong to the ever-popular Bomberman) make use of a single play area for all the players.

As many game consoles now support online or network games, split-screen is often supported *in combination* with these multi-system modes. For example, in a network or internet game of *Halo 2*, up to four players may be playing in split-screen on each console in the network.

Single-system games may also involve several gamers taking turns playing a game on the same system using the same input devices. In PC gaming, a multiplayer game where the players share a computer is usually called "hotseat".

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List of Computer and Video Games

This is a list of video games.

List of computer and video games by genre

By platform

List of Atari 2600 games
List of Atari Jaguar games
List of Commodore 64 games
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List of Game & Watch games
List of Game Boy games
List of Game Boy Advance games
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List of NES games (North America and Europe)
List of Nintendo 64 games
List of Nintendo DS games
List of Nintendo Revolution games
List of PlayStation games
List of PlayStation 2 games
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List of Sega Genesis games (North America)
List of Sega Mega Drive games (Europe and Japan)
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List of Xbox 360 games
List of Xbox games
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By character

List of Donkey Kong games
List of Kirby games
List of Mario games
List of Sonic the Hedgehog games
List of Wario games

See also

- List of video game consoles

List of Computer and Video Games by Genre

This article gives a **list of computer games and video games by category**, i.e. arranged alphabetically by genre. Some categories/ genres are briefly defined at the beginning of their respective sections.

Action-Adventure

Action-adventure games are those where action is the predominant aspect of gameplay, but puzzle-solving and the exploration of, and interaction with, the environment are also key to gameplay; as opposed to "pure" adventure games, where action sequences are the exception rather than the rule. With technological limitations on gameplay becoming less of an issue to game designers, more action games are overlapping into this category. (see also survival horror.)

Adventure
Exile (BBC computer game)
Demon Stone
Killer 7
The Lord of the Rings: The Two Towers (video game)
The Lord of the Rings: The Return of the King (video game)
Star Fox Adventures
SunDog: Frozen Legacy
Tomb Raider series

Adventure

(see also action-adventure and puzzle games)

Broken Sword
Colossal Cave Adventure
The Colonel's Bequest
Day of the Tentacle
Eleventh Hour'
Full Throttle
Indiana Jones and the Fate of Atlantis
Indiana Jones and the Last Crusade: The Graphic Adventure
The Infinite Ocean
King's Quest series
Last Rose In A Desert Garden

Legend of Zelda series
The Longest Journey
LOOM
Maniac Mansion
Monkey Island series
Myst series
The Neverhood
Sam & Max Hit the Road
Schizm: Mysterious Journey
Space Quest series
The 7th Guest
Skyborg: Into the Vortex
Simon the Sorcerer series
Sentimental Graffiti
The Dig
Zak McKracken and the Alien Mindbenders
Zork series

Educational

Carmen Sandiego series
Giraffe
Granny's Garden
Hang Man
Mavis Beacon Teaches Typing series
Number Munchers
The Oregon Trail series
Robocode
Star Wars DroidWorks
The Typing of the Dead

Fighting

Barbarian
Battletoads
Darkstalkers series
Dead or Alive series
Double Dragon series
Final Fight
King of Fighters series
Lugaru
Mortal Kombat series

Power Stone series
Soul Edge/Soul Calibur series
Street Fighter series
Streets of Rage series
Super Smash Bros. series
Tekken series
Virtua Fighter series
The Way of the Exploding Fist

First-person shooters

Game-controlled environment

This category includes games where the player's point of view does not change, and those where the player's movements are (usually) entirely predetermined by the game design ("rail shooters")

Area 51
Duck Hunt
Time Crisis series
Virtua Cop

Player-controlled environment

Area 51 (different from the above)
Avara
Battlefield series
Blood Series
Call of Duty series
Condemned: Criminal Origins
Delta Force series
Descent
Doom series
Duke Nukem 3D
Ethnic Cleansing
Far Cry
F.E.A.R.
Ghost Recon series
GoldenEye 007
Greg Hastings Tournament Paintball MAX'D
Halo: Combat Evolved series
Half-Life series
Hardwar

Hired Guns
Global Operations
I.G.I. series
Killzone
Kingpin: Life of Crime
Magic Carpet series
Marathon series
MechWarrior series
Medal of Honor series
Metroid Prime series
No One Lives Forever series
Operation Body Count
Quake series
Rainbow Six series
Terra Nova: Strike Force Centuari
Redneck Rampage
Serious Sam series
Undying
Unreal series
Wolfenstein 3D series
Wolfenstein: Enemy Territory
XIII

"Complete" list available at http://firstpersonshooters.org/

Vehicle Based

BattleTanx series
Descent series
Necrodome
Redline

Mech

MechWarrior series
Heavy Gear series

These titles may be FPS depending on your definition:

Damage Inc
Giants: Citizen Kabuto
Hardwar
Heavy Gear
Hidden and Dangerous
Hired Guns
Magic Carpet series

Special Force
Under Ash

God games

Some do not consider some games of this genre to be games at all, but rather "digital toys" or "software toys". Indeed, this is how Will Wright, the designer of the most popular video game of all time, The Sims, describes his games.

Black and White series
Populous
RollerCoaster Tycoon series
The Sims
SimAnt
SimCity series
SimEarth
SimFarm
Sim Park
Simutrans
Utopia, for Mattel Intellivision (1982)
Virtual U
Caesar III, a city builder game set in ancient Rome
Zeus, a city builder game set in ancient Greece
Pharaoh, a city builder game set in ancient Egypt
1503 A.D., a city builder game set in the New World (Americas)

Maze games

3D Monster Maze
Abashera
Gauntlet
Pac-Man
Scarab of Ra

Online games

Games played over the Internet with other human players in a shared environment. The gameplay is coordinated by a game server. While many games can be played on a computer network, online games are characterized by the game environment being persistent and shared among a significant number of players. The genre's expansion accelerated in 1995 when the internet became popular. Not all game types lend themselves easily to online gaming. The most typical ones are:

Online Role-Playing Games

AdventureQuest
Diablo series
Dungeon, (1975)
EverQuest
Final Fantasy series
MUDs
Neverwinter Nights
RuneScape
Star Wars: Knights of the Old Republic series
Ultima Online
Vendetta Online
World of Warcraft

Online Shooters

America's Army
Battlefield series
Counter Strike
Halo (video game series)
Killzone
PlanetSide
Tactical Ops: Assault on Terror
Tribes 2
Unreal Tournament
World War II Online

Online Browser-based

Baseball Mogul Online
BattleMaster
Battle Mines
Game of God
Kings of Chaos
NukeZone
Nationstates
Ogame
OutWar

Online Real-time strategy

Command & Conquer
Command & Conquer: Red Alert 2
Perimeter (game)
Warcraft: Orcs & Humans
Warcraft II: Tides of Darkness
Warcraft II: Beyond the Dark Portal
Warcraft III
Warcraft III: The Frozen Throne
Time Of Defiance
Superpower 2
StarCraft
StarCraft: Brood War
Virus RTS Game

Platformers

Platformers, also called *side-scrollers*, view the game area from a side or "cutaway" perspective. In these games, the background or playing area smoothly scrolls as the player moves about, hence the name. These games are traditionally 2D, but some have employed 3D computer graphics effectively. Traditional elements of these games include running, jumping and some fighting. Side-scrollers were some of the first types of video games and are still popular today, usually with younger players.

Abuse
Alex Kidd
Castlevania series
Captain Claw
Commander Keen series
Contra/Probotector series
Crash Bandicoot series
Dig Dug
Donkey Kong
Duke Nukem I and II
Jak and Daxter
Kirby series
Gex series
Ghouls 'n Ghosts series
Gish
Lionheart
Lode Runner

Metroid series
Mega Man (Japan: RockMan) series
Pitfall
Prince of Persia series
Ratchet & Clank series
Rayman series
Sonic the Hedgehog series
Super Mario Bros. series
Wario Land series
Wonderboy series

Puzzle

Many games in the adventure and maze genres could arguably fit into this category as well. See list of puzzle-based computer and video games for a listing of puzzle games by type.

Ballance
Dr. Mario
The Incredible Machine series
Inhabitants
Lemmings
Marbol
Puyo Puyo
Tetris
Filler

Racing games

Simulation style

4D Sports Driving
ATV Off-Road Fury series
Colin McRae Rally series
Gran Turismo series
Grand Prix Legends
Motocross Madness series
MX Unleashed
MX vs. ATV Unleashed
Stunts
Streed Rod series

Arcade style

Armagetron
Carmageddon series
Final Lap
F-Zero series
Grand Theft Auto series
High Octane
Marble Madness
Mario Kart series
Out Run
Pole Position series
Project Gotham Racing
Road Rash
Sega Rally series
The Simpsons Road Rage
Test Drive series
wipEout series

Rhythm games

3DDX
Beatmania, Beatmania IIDX and variants
Britney's Dance Beat
Bust a Groove (Japan: Bust a Move)
Crackin' DJ
Dance Aerobics
Dance Dance Revolution series
Dance ManiaX
Dance:UK
Dance With Intensity
Disney's Jungle Book Groove Party
Djmax
DJ Wars
Donkey Konga
Dream Audition
DrumMania
EZ2DJ
EZ2Dancer
Feet of Fury
Flash Flash Revolution
Frequency and its sequel Amplitude
Gitaroo Man
GuitarFreaks
Guitar Jam

In the Groove
Daigasso! Band Brothers
Karaoke Revolution
Keyboardmania
Mad Maestro
Mambo A Go Go
Martial Beat
NeoDrumX
Ossu! Tatakae! Ouendan
PacaPaca Passion
PaRappa the Rapper and sequel UmJammer Lammy
ParaParaParadise
Pop'n Music
Puyo Puyo Da
Pump It Up
Rez
Samba de Amigo
Shakkato Tambourine
Shamisen Brothers (sÚÖé¶üº)
SingStar
Space Channel 5 and its sequel
Spice World
StepMania
Stepping Stage
Taiko: Drum Master (aka Taiko no tatsujin)
Technic Beat
Technictix
Technomotion
TeknoWerk
Vib Ribbon
Virtual Orchestra Studio (VOS)

Role-Playing Games

Alternate Reality series
Ambermoon
Amberstar
Anachronox
Arc the Lad series
Arcanum
Astonia
Avernum series
Bahamut Lagoon

Baldur's Gate series
Bard's Tale (1985) series
Bard's Tale (2004)
Breath of Fire series
The Changeling
Chrono Cross
Chrono Trigger
Deus Ex and Deus Ex: Invisible War
Diablo series
Dot.Hack series
Dragon Quest (aka Dragon Warrior) series
Dragon Wars
Drakengard
Dungeon Master series
Dungeon Siege series
EarthBound\Mother series
The Elder Scrolls series (Arena, Daggerfall, Morrowind and Oblivion)
Exile (aka Avernum) series
Fable
Fallout series
Final Fantasy series
Fire Emblem series
Forgotten Realms Unlimited Adventures
Gateway to the Savage Frontier
Geneforge series
Gold Box D&D series
Golden Sun
Grand Theft Auto series
King of Dragon Pass
Kingdom Hearts
Lufia (Japanese title: Estopolis) series
Magebane
Mars Saga
Might and Magic series
Mount & Blade
Neverwinter Nights series
Ogre Battle series
The Palace
Paper Mario
Phantasy Star series
Planescape: Torment
Pokémon series
Quest for Glory (aka Hero's Quest) series
Radical Dreamers

Rudora no Hihou (ak.a Treasure of the Rudras)
SaGa series
Seiken Densetsu series (Secret of Mana, Legend of Mana etc.)
Star Ocean series
Star Wars: Knights of the Old Republic
Suikoden series
Super Mario RPG: The Legend of the Seven Stars
Tales series (Namco's Tales)
The Temple of Elemental Evil
Treasures of the Savage Frontier
Ultima series
Wasteland
Wild ARMs series
Wizardry series
Ys series
Yu-Gi-Oh series
Xenogears
Xenosaga series

MMORPGs

- *see* list of MMORPGs

Roguelikes

Ancient Domains Of Mystery
Angband
Castle of the Winds
The Dungeon Revealed / The Dungeon of Doom
Hack
Iter Vehemens ad Necem
NetHack
Moria
Rogue
Tyrant

Shooters

Centipede
Dr. Blob's Organism
Missile Command
Phoenix

Space Invaders

Shoot 'em ups

1942
3D Defender
Abadox
Agony
Aero Blasters
Alpha Mission
Apidya
Asteroids
Bangai-O
Bio-ship Paladin
Darius series
Disposable Hero
DonPachi
DoDonPachi
Dr. Blob's Organism
Dragon Breed
Earth Defense Force
Fantasy Zone
Galaga
Gradius series
Ikaruga
Jets'n'Guns
Lethal Xcess
Mr Heli
Nanostray
Parodius series
Project-X
R-Type series
Radiant Silvergun
Raiden series
Raptor
Return Fire
Sinistar
Smash TV
Spacewar (not a true shoot-em-up; 1962 multiplayer deathmatch)
Spheres of Chaos
SolarStriker
Stardust series
Star Fox series

Thunderforce series
Transbot
Twinbee series
Tyrian
Wings of Death
Xenon series
XPilot
Zaxxon
Zero Wing

Simulation Games

Simulation, or simulator, games attempt recreating the experience of controlling a some kind vehicle, like a ship, airplane or car, often as realistically as practically possible, taking into account physics and other real-world limitations.

Ace combat
FlightGear
Flight Unlimited series
Microsoft Flight Simulator series
Orbiter
Silent Hunter
Stunt Island
X-Plane

Space simulation

Space simulations tend to be much like flight simulations but generally have to take many liberties to adapt the "true" physics of spaceflight to be more player-friendly.

Freespace series
Elite
Frontier
First Encounters
Escape Velocity
EVE Online (a massive multiplayer online game set in space)
Freelancer
Galaxy Trek
Hegemonia: Legions of Iron
Homeworld
Homeworld: Cataclysm
Homeworld 2
Independence War (aka I-War)

Independence War 2: Edge of Chaos
Nexus: The Jupiter Incident
Noctis (simulates a galaxy of stars, planets and moons for pure exploration)
Starflight
Starlancer
Star Trek: Bridge Commander
Star Fleet Command
Star Wars: Rogue Squadron
Star Wars: Starfighter
Tachyon: The Fringe
TDZK
Wing Commander and Privateer series
X: Beyond the Frontier
X2: The Threat
X-Wing series
X-Wing
TIE Fighter
X-Wing vs. TIE Fighter
X-Wing Alliance

Sports

Activision Boxing
Activision Tennis
All Star Baseball 2003
Arch Rivals
Auto Racing (Intellivision)
Backyard Sports series
Baseball, (1971)
Baseball Mogul series
Championship Manager
Earl Weaver Baseball series (EA Sports)
FIFA Soccer series (EA Sports)
Ghetto Pong
Greg Hastings Tournament Paintball MAX'D
Hardball series
High Heat Baseball series
Intellivision World Series Baseball
Jose Canseco Baseball
Ken Griffey Jr. Baseball
Kick Off
Knockout Kings series (EA Sports)

Madden NFL series (EA Sports)
Major League Baseball (Intellivision)
Motocross (Intellivision)
Mutant League series
NASCAR Racing series (EA Sports)
NASL Soccer (Intellivision)
NBA Jam series (EA Sports)
NBA ShootOut series
NFL Football (Intellivision)
NHL series (EA Sports)
Pete Rose Baseball
Pong
Premier Manager 2005/2006
Rumble in the Rink
Tecmo Super Bowl series
Tiger Woods Golf series (EA Sports)
Tony La Russa Baseball series

Stealth Action

Metal Gear series
Splinter Cell series
Thief series
Tenchu series

Strategy

General Strategy

Core Wars
Defender of the Crown
Lords of Conquest
Wargame Construction Set

Real-time strategy

Age of Empires series
Age of Mythology series
Armies of Exigo
Battle Realms
Blitzkrieg series

Close Combat series
Codename Panzers series
Command and Conquer series
Commandos series
The Corporate Machine
Dark Reign
Dune II
Dungeon Keeper series
Earth 2150 series
Europa Universalis series
Ground Control series
Homeworld series
Krush Kill and Destroy series
Metal Fatigue
Myth series
Outlive
Outpost Kaloki X
Perimeter
Populous series
Railroad Tycoon
Red Alert
Rise of Nations series
The Settlers series
StarCraft & add-on
Stronghold (castle building) series
Stronghold (D&D)
Sudden Strike
Superpower 2
Syndicate series
Total Annihilation
Total War series
Warcraft series
War of the Ring - based on Lord of the Rings novel

Turn-based

Age of Wonders series
Alpha Centauri
Ascendancy
Battle Isle series
Battle for Wesnoth
Battles of Norghan
Chaos series
Civilization series

Colonization
Dominions II: The Ascension Wars
Empire Deluxe
Final Fantasy Tactics
Fire Emblem series
Galactic Civilizations
King of Dragon Pass
Heroes of Might and Magic series
Jagged Alliance series
Master of Magic
Master of Orion series
Nintendo Wars series
Patton Versus Rommel
Shattered Union
Shining Force
Stars!
VGA Planets (for play-by-email)
War: Age of Imperialism
Warlords series
Worms series (includes action game elements)
X-COM (UFO) series

Hybrid strategy

Strange Adventures in Infinite Space
Weird Worlds: Return to Infinite Space

Survival Horror

Survival Horror games focus on fear and attempt to scare the player via traditional horror elements such as atmospherics, death, the undead, blood and gore. Most of these games include third- or first-person shooter elements.

Alone in the Dark series
Clive Barker's Undying
Clock Tower series
Dino Crisis series
Fatal Frame (Project Zero) series
Resident Evil series
Silent Hill series
Sweet Home (believed to have originated the genre)
System Shock series

Third-Person Shooters/Third-Person Action

Third-person shooters (TPS) employ a specific perspective for the player. This is normally just behind and above the game character, but it is sometimes an isometric perspective.

American McGee's Alice
BloodRayne
Dynasty Warriors
Grand Theft Auto series
Heretic II
Hitman series
Mafia
Max Payne series
Mercenaries: Playground of Destruction
Space Harrier
Tomb Raider series
Splinter Cell series

Miscellany

Animal Crossing
Katamari Damacy

Collectible Card Game

Magic: The Gathering has had computer versions for some time. There is also a Pokemon Trading Card game for the GameBoy Color.

Traditional

Most popular board games, card games, and the like have been computerized to some degree or another. Computer game programs can be worthy opponents and can help you improve your skill at traditional games.

Chess, Checkers, Othello (a.k.a. Reversi), and Backgammon have world class computer programs.
Mah-jongg and related games are immensely popular in Japan.
Maqiupai
I-go, popular in Asia.

Computer-assisted Gaming

Computer-assisted gaming (or CAG) refers to games which are at least partially computerized, but which are actively regulated by a human referee.

Concept

Computer-assisted gaming attempts to combine the advantages of computer games with those of paper-and-pencil simulation games. In computer-assisted gaming, computers are used for recordkeeping and sometimes for the resolution of combat, but a human referee makes any decisions requiring judgement.

Variations

A computer-assisted game can be little more than a collection of rules and notes on computer, or as complete as a computer game, with a human referee needed only to make the non-random decisions. It can be played remotely or with everyone in the same room looking at one or more computer monitors. (The referee must have his own monitor; the players can share one, or each player can have his own. Or only the referee may have a monitor, with the players using paper as usual.) This flexibility allows players to combine the best aspects of paper-and-pencil and computer games while computerizing the game as much or as little as desired.

Computer-assisted gaming is sometimes referred to as CARP, which stands for computer-assisted role-playing. Role-playing games were one of the first types of simulation games to develop into computer-assisted games.

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Juggling

In its general sense, **juggling** can refer to all forms of artful or skillful object manipulation. This includes most prop-based circus skills such as diabolo, devil sticks, cigar box manipulation, Fire-twirling, contact juggling, and hat manipulation.

The most recognisable form of juggling is Toss juggling. For more in-depth information on a given form of juggling, juggling history or a specific juggling prop, follow the link to the related article.

Jugglers refer to the objects they juggle as **props**, the most popular being specially made balls, beanbags, rings, clubs, indian clubs or bouncing balls. Some performers also use "dangerous" objects such as chainsaws, knives and fire torches.

The word "juggling" derives from the Middle English "jogelen", to entertain by performing tricks, in turn from the French "jongleur", the Old French "jogler", the Latin "ioculr", to jest, and "iocus", a joke.

Origins and History to 1947 A.D.

The act of juggling pre-dates any recorded history so the exact origins will never be known. The earliest known record of juggling, from the 15th Beni Hassan tomb of an unknown prince, shows female dancers and acrobats throwing balls. Juggling has also been recorded in most other early civilizations including China, India, Greece, Aztec (Mexico) and Polynesia.

In Europe, juggling was an acceptable diversion until the decline of the Roman Empire, after which it fell into disgrace. Throughout the Middle Ages most histories were written by religious clerics who frowned upon the type of performers who juggled, called 'Gleemen', accusing them of base morals or even practicing witchcraft. Jugglers in this era would only perform in market places, streets, fairs or drinking houses. They would perform short, humorous and bawdy acts and pass a hat or bag among the audience for tips. Some king’s and noblemen’s bards, fools, or jesters would have been able to juggle or perform acrobatics, though their main skills would have been oral (poetry, music, comedy and story telling).

In 1768 Philip Astley opened the first modern circus. A few years later he employed jugglers to perform acts along with the horse and clown acts. From then until the modern day, jugglers have found work with and have commonly been associated with circuses.

In the 19th century Variety and Music Hall theatres became more popular, and jugglers were in demand to fill time between music acts, performing in front of the curtain while sets are changed. Performers started specializing in juggling, separating it from other kinds of performance such as sword swallowing and magic. The Gentleman Juggler style was established by German jugglers such as Salerno and Kara. Rubber processing developed and jugglers started using rubber balls. Previously juggling balls were made from balls of twine, stuffed leather bags, wooden spheres or various metals. Solid or inflatable rubber balls meant that bounce juggling was possible. Inflated rubber balls made ball spinning easier and more reaily accessible. Soon, in North America, Vaudeville theatres employed many jugglers, often hiring European performers.

In the early to mid 20th century, variety and vaudeville shows started to decline in popularity due to competition from motion picture theatres, radio and television. The International Jugglers' Association was formed in 1947 to support professional jugglers. Their annual conventions became a focus for not only professional but amateur jugglers. Since the 1950's there has been a huge increase in the numbers of amateur jugglers compared to performing professionals leading to a very distinct juggling culture.

The growth of juggling as a hobby, 1947 - present

Until the early 1950s, juggling was only practiced by performers. Since then more and more people have begun juggling as a hobby. The International Jugglers' Association began as a club for performing jugglers but soon had non-performers joined up and started attending the annual conventions.

As more amateurs around the world began to juggle as a hobby sport or pastime, they started meeting together regularly to practice and socialise in local groups. These groups formed into juggling clubs, and currently there are clubs for jugglers in almost every city and large town in the western world.

When juggling was practiced by professionals only, jugglers were secretive and possesive of their tricks and skills. Over the years the attitude has changed, and juggling has now become a major social activity for hundreds of thousands (or possibly millions) of people all over the world who are more than happy to share their skills and encourage others to join in. This more open approach, and the fact that basic juggling is not that difficult to learn, has made juggling into an activity that almost anyone can participate in. There are many reasons why someone may learn to juggle. These include:

- It is fun to learn and fun to teach
- It looks impressive even if you aren't very good at it... great for showing off!
- It can help relieve stress
- While it is initially easy to pick up, juggling is challenging and no matter how good you get there is always more to learn
- It can help improve reflexes and hand-eye coordination
- It has been "proven" to increase the size of your brain

- Some jugglers claim it makes them more attractive to the opposite sex
- It can be used to keep fit (often combined with jogging,which is called joggling)
- It can be a great icebreaker at parties

The majority of hobby jugglers can be split into one of two groups. The first are those who learned to juggle at university or college juggling clubs. These people are often mathematicians, scientists and computer programmers. They like juggling because it can be very structured and it can be analysed and modeled easily by maths and physics. Juggling has established itself as a very useful model for researchers studying motor skills and learning techniques. The second group are from the counter culture or alternative culture scene. They enjoy juggling because, while it can be very structured, it can also be as free as you want it to be, with a virtually infinite scope for individual personal expression. Fire juggling is a common appeal.

Since the 1970s, "Juggling For the Complete Klutz", a book by John Cassidy that is sold with a set of three beanbags attached, has probably introduced juggling to more people than any other single source. Another reason for the increase of people who can juggle is that many businesses and schools have employed professional workshop leaders to teach various circus skills.

Modern Juggling Culture

Since the late 1980s a large juggling subculture has developed, almost completely unknown and unrecognised by the general public. The scene revolves around local clubs and organisiations, special events, shows, magazines, websites, internet forums and, possibly most importantly, juggling conventions. In recent years there has also been a growing focus on juggling competitions.

Populating the scene are many "juggling celebrities". These people are notable (or notorius) for being good or creative jugglers, entertaining performers, convention organisers, experts in their field or just for having a curiously interesting personality or character. Of course, outside of the juggling world they are completely unknown.

- Local clubs/societies/workshops - most cities and large towns have juggling clubs where anyone is welcome to learn and share skills. Many universities and colleges have juggling or circus skills societies. There are also many community circus groups that usually aim to teach young people and put on shows. The Internet Juggling Database maintains a searchable database of most juggling clubs.

- Organisations - The first organisation that promoted juggling and helped jugglers was the International Jugglers' Association (IJA), based almost entirely in North America. The European Juggling Association facilitates the annual European Juggling Convention and promotes juggling in Europe. Various countries have national associations, including Italy, Spain and Switzerland. There is also the Christian Jugglers Association.

- Magazines - Kaskade is the European juggling magazine, published in both English and German. JUGGLE is the official publication of the IJA and focuses on the North American scene. Juggling Magazine is published in Italy. Newton Las Pelotas is published in Argentina for the Latin American readership.

- World Juggling Day - is the second or third Saturday in June. There are events organized world wide to teach people how to juggle, to promote juggling or for jugglers to get together, and celebrate.

- Conventions/festivals - Many countries, cities or juggling clubs hold their own annual juggling convention. These are the backbone of the juggling scene, the events that regularly bring jugglers from a wide area together to socialize. The attendance of a convention can be anything from a few dozen to a few thousand people. The principal focus of most juggling conventions is the main hall, a large space for open juggling. There will also be more formal "workshops" in which expert jugglers will work with small groups on specific skills and techniques. Most juggling conventions will also include a big show (open to the general public), competitions and juggling games. The Internet Juggling Database maintains a searchable database of all conventions in the past and future.

Popular Forms of Juggling

Solo Juggling

Most jugglers concentrate on three main props. These are balls, clubs and rings. Many of the same tricks and skills can transfer between the props but there are unique qualities for each.

Ball juggling is probably the most popular prop, as everybody learns with balls first. Ball juggling can be broken down into the following styles: Contact Juggling, Numbers Juggling, Pattern Juggling, Trick Juggling, Technical Juggling, Bounce Juggling and Football Juggling. For the purposes of record keeping and ease of communication, the terms balls and beanbags are generally interchangeable in the juggling world.

Rings are less popular than balls and clubs, mainly because they can be painful to juggle, and many jugglers find them more restrictive. The most popular styles of ring juggling are Numbers Juggling and Technical Juggling.

Clubs (sometimes called "pins" because they look like Bowling pins) are very popular with solo jugglers. They spin when they are thrown and are more stable in the air than balls. The more popular styles of club juggling are Numbers Juggling, Trick Juggling, Technical Juggling and Club Swinging.

other there are many arts that involve manipulating objects but not throwing them up that are related to juggling, such as diabolo (an hourglass shaped object manipulated with a string), devilsticks (a baton manipulated by two shorter batons), and cigar boxes (rectangular boxes, usually used in groups of three)

Multiple Person Juggling

Instead of juggling on their own, a juggler will often find a friend or two and throw props about as a pair or group.

When club passing, two or more jugglers share a juggling pattern between them, usually facing each other. Passing has lots of forms and is by far most popular using clubs. The most popular are numbers passing, passing and doing tricks, passing in large groups, experimenting with new and complex patterns and working on high level technical routines.

There are a few other ways two or more people can juggle together. These include Sharing/Siamese/Buddy Juggling, where two jugglers stand side by side juggling half the pattern using one hand each; Stealing, where one person juggles a regular pattern and another person takes away all the props, keeping the pattern intact, leaving the first juggler with nothing; Takeouts (sometimes also called Stealing), where single props are stolen from another juggler's pattern and returned without either juggler missing a beat.

Juggling World Records

Solo Records

Currently, juggling world records are tracked by the Juggling Information Service Committee on Numbers Juggling (JISCON). All the records listed on the JISCON page represent the longest runs with each number and prop that has been authenticated using video evidence. As of January 2005, the top records for each prop are:

- Rings/Plates: 13 rings for 13 catches by Albert Lucas in 2002.
- Balls/Beanbags: 12 beanbags for 12 catches, first done by Bruce Sarafian in 1996.
- Clubs/Sticks: 9 sticks for 9 catches, first done by Bruce Tiemann in 1996.

Each of these records are what is known as a "flash", meaning each prop is thrown and caught only ONCE. Some jugglers, and some juggling competitions, do not consider a flash to be "real juggling" and use "qualifying juggle" (a term taken from the International Jugglers' Association's Numbers Competition) to denote a pattern where each prop is thrown and caught at least TWICE. The JISCON records for qualifying runs are:

- Rings: 10 rings for 27 catches by Anthony Gatto in 2001.
- Balls: 10 beanbags for 23 catches by Bruce Sarafian in 2001.
- Clubs: 9 clubs by Anthony Gatto.

There are other jugglers who have equaled or bettered these records but have not submitted video evidence to the JISCON. These non-verified records stand at:

- Rings: 14 rings for 14 catches by Albert Lucas.
- Balls: 13 Beanbags for 13 catches, 12 for 13 catches and 11 for 18 catches by Peter Bone.
- Clubs: 9 clubs by Anthony Gatto.

One other solo (non-passing) record that must be mentioned is the bounce juggling record. This is tracked by the Bounce Juggling World Record page, which styles itself on the JISCON page, and also only lists records with video evidence. These records are:

- Flash: 11 bounce balls for 11 catches by Tim Nolan in 1990.
- Qualify: 10 bounce balls for 23 catches by Eden Zak in 2005.

Passing Records

When passing, only the props thrown between two separate jugglers are counted. In some patterns (ultimates or one-count) all the throws are caught by the opposite juggler but in a few patterns each juggler makes some throws to themself. If these self throws were counted, two jugglers could make a single pass to their partner and then go on to juggle solo patterns for as long as they wanted.

The JISCON page only tracks club passing records. The top records stand at:

- Flash (each prop passed at least once but less than twice): 14 clubs for 14 passes be Peter Kaseman & Darin Marriott in 2004.
- Qualify (each prop passed at least twice):12 clubs for 54 passes by Vova Galchenko & Olga Galchenko in 2004.

The Bounce Page tracks bounce passing records. The top records stand at:

- Flash: 18 balls for 30 catches by Dave Critchfield & John Jones in 2005.
- Qualify: 16 balls for 74 catches by Dave Critchfield & John Jones in 2005.

Ball passing records are not officially tracked by any site. However, the top records currently stand at:

- Flash: 18 balls for 18 catches by Ben Beever and Luke Burrage in 2002.
- Qualify: 15 balls for 27 catches Ben Beever and Luke Burrage in 2004.

Forms of Juggling Performance

For the past hundred years, since the "Golden Age" of vaudeville, variety and circus to the present, a few methods of presenting juggling on stage have survived and remained popular with audiences. These **Classic Forms** include:

- The Gentleman Juggler - using everyday objects such as hats, canes, plates, wine bottles and cigars.
- Comedy Juggling - the juggling skill is secondary to the comic character and jokes of the performer.
- Traditional Circus Style - presenting pure skill with precision, skill and panache. Also cultural extensions of this form:
  - Chinese Circus - using mainly rings and badminton rackets, fantastic costumes, concentrating on numbers juggling.

- Russian Folk - colourful costumes and characters, unique props with acrobatics.
- Sport themed - the performers dress in sporting attire and juggle sports equipment such as tennis rackets, footballs, or even snooker balls.

During the last quarter of the 20th century, many jugglers saw a way to use their skills as a form of artistic expression. They put aside the goals of popular entertainment for the masses, and instead sought out new ideals, something more than just juggling. **Modern** juggling begins again from first principles, abandoning traditional definitions and systems of creating new work. This dismissal of tradition also involves the rejection of conventional expectations, stressing freedom of expression and experimentation. The most experimental presentations of modern juggling often startles and alienates audiences unused to the bizarre and unpredictable. Even so, the avant-garde approach has been very influential to the rest of the juggling world. Many performers working in traditional venues such as variety and circuses now mix modern juggling ideas into their acts.

Modern juggling artists use their physical object manipulation (juggling) skills in combination with various performance concepts that can include patterns based on numerical sequences, character work, theatre, new props and obects, or working in new environments and staging. Some would say that Modern juggling is now so well accepted by juggling audiences that it is no longer avant-garde. In juggling convention shows in Europe, modern juggling is just as popular as the classic forms of juggling, if not more so.

In the past ten years a new type of juggling performer has emerged. They aren’t full-time, professional jugglers and they don’t create work for a non-juggling audience. Instead they perform exclusively at juggling conventions, to other people who share their own understanding of juggling performance and culture. This environment has produced a new style of juggling performance know as **Postmodern** Juggling.

Where Modern performers hoped to unearth universals or the fundamentals of art, Postmodern performers embrace diversity. They reject the rigid boundaries and favour eclecticism, the mixing of ideas and forms. Postmodern performers use references to other jugglers, other performers, other parts of juggling culture or even to their own previous performances. This could be in the form of recognizable tricks, styles, characters or ideas. A postmodern juggling act taken out of context, to an audience of non-jugglers, could not be presented as a stand-alone work of art; instead it relies on knowledgeable audience members to find the meaning behind the act for themselves.

Postmodern juggling performance also blurs the line between "mass entertainment" and "high art". The artistic expression is in the repetition and distortion of currently accepted forms of performance. While the mindset of the performers are very different, most juggling audiences make no distinction between Modern and Postmodern juggling acts, they simply see both as Modern.

Professional Performers

It has been said that jugglers are quite low down in the hierarchy of entertainment and performers... just below magicians but slightly above mimes. Jugglers, of course, disagree entirely. So do mimes, though their objections are rarely heard.

During the early growth of movies, radio and television, juggling, as a form of popular entertainment, suffered more than other variety acts. Music and comedy transferred very easily to radio but juggling, being mostly physical, didn't. In the early years of TV, when variety-style programming was very popular, jugglers were often featured, but developing a new act for each new show, week after week, was impossible. Comedians and musicians can pay others to write their material but jugglers can't get other people to learn new material for them.

Venues

Circus. Wherever there are circuses, there are jugglers, though usually only one or two jugglers per circus. This means that only the best, most advanced jugglers perform in traditional and established circuses. Most circus jugglers are from Russia and other Soviet block states, products of very prestigious circus schools. Some of the greatest jugglers from the past 50 years are from Eastern Europe, including Sergei Ignatov, Evgenij Biljauer and Viktor Kee (featured in Cirque du Soleil productions). Clowns would often dress up and perform this art with several objects ranging from bouncy balls to scarves.

Variety Theatres still do business in Europe, particularly Germany. In North America the closest thing to variety shows are in casinos, in places like Las Vegas, where jugglers perform alongside singers, comedians and others. As with circuses, the demand for jugglers to perform in variety theatres and casinos is far lower than jugglers seeking work, meaning only the best, most dynamic performers find regular work in the top venues. Germany and the USA have also produced some of the greatest jugglers from the past 50 years, most notably Francis Brunn from Germany and Anthony Gatto from America.

Rennaisance and Medieval Fairs in North America and in Europe can also offer short-term performance venues for professional jugglers. With the increasing popularity of such venues (and with the continued success of Medieval/Rennaisance themed restaurants) the ancient art of juggling finds a home since it is certainly ancient but can still be quite entertaining.

Juggling Notation Systems

Juggling tricks and patterns can become very complex. While these look great when performed, they can be very difficult to communicate using plain English or other languages. To get around this problem, various numeric or diagram based notation systems have been developed for communication between jugglers, as well as for investigating and discovering new patterns.

Diagram based notations are the clearest way to show juggling patterns on paper, but as they are based on images, their use is limited in text based communication (email and the internet). Ladder Diagrams track the path of all the props through time, where the less complicated Causal Diagrams only track the props that are in the air, and assumes that a juggle has a prop in each hand. Mills Mess State Transition Diagrams track the position of the hands during the pattern, but not the pattern of the props.

Numeric based notation systems are more popular and standardised than diagram based notations. They are used extensively in both a written form, and for those "fluent" in juggle-speak, in normal conversation.

Siteswap is by far the most common juggling notation. In its most basic form, Vanilla Siteswap, it is very easy to use, as each pattern is reduced to a simple sequence of numbers, such as "3", "97531" or "744". However, vanilla siteswap can only notate the most basic alternating two-handed patterns, with no deviations from a very strict set of rules. If one of these rules is broken, say an extra hand is added, the same string of numbers will result in a wildly different pattern than first conceived. For more slightly more complicated patterns, extra rules and syntax are added to create Synchronous Siteswap, to notate patterns where both hands throw at the same time, and Multiplex Siteswap, to notate patterns where one hand holds or throws two balls on the same beat.

Vanilla, synchronous and multiplex siteswap are the "standard" forms of siteswap, not only understood by many jugglers, but also many computer programs capable of animating juggling patterns. Other extensions to siteswap have been developed for specific purposes, though these are far less common than the "standard" forms of siteswap, understood by far fewer jugglers and only specialized software. These extensions include Passing Siteswap, Multi-Hand Notation (MHN) and General Siteswap (GS).

Beatmap is a relatively new numeric notation. It notates every "hand" on every beat during a pattern, unlike all forms of siteswap, which only notates each hand on every other beat. This means that beatmap can notate any number of hands or juggling prop and in any rhythm with no added complexity. Beatmap doesn't only notate throws, but also the time and place of each catch. By including a simple indication of crossing and uncrossing arms, beatmap can notate Mills Mess style patterns. Within beatmap it is also possible and easy to notate not only the balls in a pattern, but also the hands or arms of the juggler, as well as the position, location or orientation of the body of a juggler. Luke Burrage, the inventor of beatmap, claims that beatmap can more accurately describe more patterns than all ladder diagrams, causal diagrams, mills mess state transition diagrams, vanilla siteswap, synch siteswap, passing siteswap and multi-hand notation combined. So far use of beatmap is very limited, as most jugglers and all juggling software understand only variations of siteswap.

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Solitaire Card Games

Solitaire or **patience** is any of a family of single-player card games of a generally similar character, but varying greatly in detail. The games are more commonly known as "Patience" in British English whilst "solitaire" is the American English term.

These games typically involve dealing cards from a shuffled deck into a prescribed arrangement on a tabletop, from which the player attempts to reorder the deck by suit and rank through a series of moves transferring cards from one place to another under prescribed restrictions. Some games allow for the reshuffling of the deck(s), and/or the placement of cards into new or 'empty' locations.

Solitaire has its own terminology; see solitaire terminology.

There are many different solitaire games, but the term "solitaire" is often used to refer specifically to the most well-known form, called "Klondike". Klondike and some other solitaire games have been adapted into two-player competitive games.

There are a vast array of variations on the solitaire/patience theme, using either one or more decks of cards, with rules of varying complexity and skill levels. Many of these have been converted to electronic form and are available as computer games. Basic forms of Klondike solitaire and FreeCell come with every current installation of Microsoft Windows, for example, and Windows XP also includes a version of Spider. 123 Free Solitaire and PySol are two examples of solitaire collections that can be downloaded from the internet at no charge.

The term 'solitaire' is also used for single-player games of concentration and skill using a set layout of tiles, pegs or stones rather than cards. These games include:

- Peg solitaire
- Shanghai solitaire (computerised mahjong)

Examples of solitaire card games

A

Above and Below
Accordion
Aces Square
Aces Up
Ace-To-King
Acme
Adela Patience
Agnes I (Sorel)
Agnes II (Bernauer)
Algerian Patience
Alhambra
All Fours
All In A Row
Alternate Patience
Alternation
Amazons
Ant
American Toad
Aremis
Argos
Auld Lang Syne
Aunt Mary

B

Babette
Baccarat Solitaire
Backbone
Baker's Dozen
Baker's Dozen Two Decks
Baker's Game
Baroness*
Batsford
Beleaguered Castle
Betsy Ross
Bisley
Black Hole
Blind Alleys
Block Fourteen
Blockade
Blondes and Brunettes
Board Patience
Box Kite
Bridesmaids
Brigade
Bristol
British Blockade
British Constitution
British Square
Buffalo Bill
Busy Aces
But The Same

C

Caesar
Calculation
Calculation by Threes
Canadian Patience
Canfield
Canfield Three Decks
Canister
Capricieuse
Captive Queens
Carlton
Carpet
Carre Napoleon
Casket
Castles in Spain

Chameleon
Chess Solitaire
Chessboard
Chinese Patience
Cicely
Citadel
Class Day
Climb The Hill
Clock
Clock Patience/Clock Solitaire*
Coleopter
Colonel
Colorado
Colours
Concentration
Cone
Congress
Connections
Contradance
Corners
Corona
Counting
Courtyard
Cover Up
Crescent
Crescent Four Decks
Cribbage Solitaire
Cribbage Square Solitaire
Crazy Quilt*
Cruel
Curds and Whey*
Czarina

D

Decade
Deuces
Diamond
Diplomat
Double Canfield
Double Dot
Double Golf
Double Klondike
Double Line

Double or Quits
Double Rail
Doublets
Duchess
Duchess de Luynes
Duke

E

Eagle Wing
Easthaven
Egyptian Pyramid
Eight Off
Eighteens
Eleanor's Solitaire
Elevens
Elizabeth
Emperor
Engineer
Everest
Exchange

F

Faerie Queen
Falling Star
Fan
Fanny
Fascination Fan
Fifteens
Fifteen to Win
Figures
Finesse
Five Companions
Florentine Patience
Flower Garden
Flower Garden Two Decks
Fly
Following
Following Two Decks
Forget-Me-Not
Fortress
Fortune's Favor

Forty and Eight
Forty Thieves
Forty Thieves Four Decks
Forty Thieves Three Decks
Forty-Nine
Four By Four
Four Pegs
Four Seasons
Four Seasons Two Decks
Four Sums
Fourteen Out
Frame
FreeCell
FreeCell Four Decks
FreeCell Reversed
FreeCell Thirteens
FreeCell Three Decks
FreeCell Two Decks
French Patience
French Solitaire
Frog

G

Gaps
Gargantua
Gate
General's Patience
German Patience
Giant
Glencoe
Goldfield
Golf
Golf A-K
Golf A-K Two Decks
Golf Pyramids
Good Measure
Good Measure Two Decks
Grandfather
Grandfather's Clock
Grandmamma's Patience
Grant's Reinforcement
Great Wheel
Griffon

Gay Gordons*

H

Haden
Half And Half
Harp
Heads And Tails
Hemispheres
Hit or Miss
Horloge
House in the Wood
House of Commons
House of Lords
House on the Hill

I

Icarus
Idle Aces
Imaginary Thirteen
Imperial
Indian
Intelligence
Interregnum
Intrigue

J

Jacqueline
Japanese Solitaire
Joker Forty Thieves
Joker FreeCell
Joker Golf A-K
Joker Klondike
Joker Pyramid
Jubilee
Juvenile

K

Khedive

King Albert
King Edward
King of Scotland
Kingdom
Kings
King's Audience
King's Cross
Klondike
Klondike by Threes
Klondike Four Decks
Klondike Reversed
Klondike Three Decks
Knaves
Knaves' Dial
Knight Catch All
Knights Errant

L

La Belle Lucie
La Belle Lucie Player's Choice
La Belle Lucie with a Draw
Labyrinth
Lady Betty
Lady of the Manor
Lady Palk
Laggard Lady
Lagoon
Lanes
Le Croix d'Honneur
Legion
Letter A
Letter X
Leoni's Own
Les Quatre Coins
Lido of Venice
Limited
Line Up
Little Billee
Little Spider
Little Windmill
Louis
Louisa
Lucas

M

Mantis
Maria
Marshal
Martha
Matrimony*
Maze
Memory-Up (6x4 grid)
Memory-Up (8x5 grid)
Midshipman
Milky Way
Milligan Harp
Minerve
Mirror
Miss Milligan
Mississippi
Monte Carlo
Monte Carlo Thirteens
Mount Olympus
Move for the Goal
Mrs. Mop
Museum

N

Napoleon
Napoleon's Exile
Napoleon's Square
Nationale
Nestor
Nestor Two Decks
New York
New Zealand Patience
Nines
Ninety-One
Nivernaise
Number Fourteen
Number Ten

O

Octagon

Octave
Odd and Even
Only-One-Left (4x4 square) Puzzle
Only-One-Left (5x5 square) Puzzle
Open Crescent
Open Start
Opus
Osmosis

P

Pairs
Palace
Parallels
Passengers
Patriarchs
Peek
Peg Star Solitaire
Penguin
Peony
Perpetual Motion
Perseverance
Persian Patience
Picture Patience
Poker Solitaire
Portuguese Solitaire*
Precedence
Princess Patience
Prisoners
Privileged Four
Pulsar
Push Pin
Push in the Corner
Put-Them-In-Order (3x3 square) Puzzle
Put-Them-In-Order (4x4 square) Puzzle
Put-Them-In-Order (5x5 square) Puzzle
Pyramid
Pyramid (Easy Couple)
Pyramid by Seven
Pyramid Two Decks
Pyramid's Stories

Q

Quadrangle
Quadruplets
Quartets
Queen of Italy
Queens and Knaves

R

Rachel
Railway
Rainbow
Rank and File*
Rank by Rank
Red and Black
Regal Family
Reversi
Robert
Rosette
Rouge et Noir
Rows of Four
Royal Aids
Royal Cotillion
Royal Marriage
Royal Parade
Royal Ranks
Royal Rendezvous
Royal Square
Rule of Seven
Russian Solitaire

S

S Patience
Salic Law
Scorpion
Scarab
Scotch Patience
Senior Wrangler
Sentinel
Serpent Poker Solitaire
Seven Sisters
Seven Devils*
Seven Up

Shamrocks
Shanghai
Shifting
Shuttle
Simple Simon
Simplex
Simplicity
Single Rail
Sir Tommy
Sir Tommy Two Decks
Six By Six
Sixes and Sevens
Sly Fox
Solid Square
Solitaire Showdown*
Somerset
Spaces*
Spanish Patience
Spider
Spider One Suit
Spider Three Decks
Spider Two Suits
Spiderette
Squadron
Square
St. Helena
Stalactites
Stalactites and Stalagmites
Step by Step
Steps
Step-Up
Stonewall
Storehouse
Strategy
Streets
Streets and Alleys
Suit by Suit
Sultan
Sum of Five
Super Flower Garden
Superior Canfield
Sydney Solitaire

T

Tabby Cat*
Tam O'Shanter
Tantalus
Tens
The Dial
The Dial II
The Flea
The Plot
The Red and the Black
The Spark
Thirteen, Fifteen, Seventeen
Thirteen Up
Thirteens
Thirty
Thirty-Six
Three Blind Mice*
Three Hills
Three Pyramids
Three Shuffles and a Draw*
Thumb and Pouch
Tournament
Tower of Hanoi
Tower of Hanoi Thirteen
Tower of Pisa
Trafalgar Square
Transformation
Trapezoid
Travellers
Trefoil
Triad
Tri Peaks*
Triple Alliance
Triple Line
Tristan and Isolde
Twenty
Twin Queens
Two Rings

U-Z

Uncle Sam
Up or Down
Variegated Canfield
Vertical

Virginia Reel
Waning Moon
Wasp*
Waste the Same
Westcliff
Wheatsheaf
Whitehead
Will o' the Wisp
Windmill
Wish
Xantia
Yukon
Yukon Three Decks
Yukon Two Decks
Zodiac

Reference Materials

Lee, Sloane & Packard, Gabriel. 100 Best Solitaire Games: 100 Ways to Entertain Yourself with a Deck of Cards. ; New York, N. Y.: Cardoza Publishing, 2004. (ISBN 1-58042-115-6)
Arnold, Peter. Card Games for One. London: Hamlyn, 2002 (ISBN 0-600-60727-5)
Moorehead, Albert H. & Mott-Smith, Geoffrey. The Complete Book of Solitaire and Patience Games. New York: Bantam Books, 1977 (ISBN 0553262408)
Crépeau, Pierre. The Complete Book of Solitaire (a translation of Le Grand Livre des Patiences). Willowdale, Ontario: Firefly Books, 2001. (ISBN 1552095975)

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Other Games

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Alternate Reality Games

An **alternate reality game** is a cross media game that deliberately blurs the line between the in-game and out-of-game experiences, often being used as a marketing tool for a product or service. While games may primarily be centered around online resources, often events that happen inside the game reality will "reach out" into the players' lives in order to bring them together. Elements of the plotline may be provided to the players in almost any form, some of those used have been:

- e-mail
- websites, both those obviously connected with the game and those innocent looking - often where the bulk of the game lies, these sites provide puzzles in many forms, e.g. cryptography
- phone calls to a player's home, cell or work phone
- land mail
- newspaper articles or classifieds
- chat/Instant messaging and so on - the games have been known to initiate conversation
- IRC channels
- real world artifacts related to the game in play
- real world events utilizing actors who interact with the players who attend

These games always have a specific goal of not only involving the player with the story and/or fictional characters but of connecting them to each other. Many game puzzles can be solved only by the collective and collaborative efforts of multiple players.

Alternate reality games are usually earmarked by a large game-reality in the form of multiple websites, all of which take themselves as being totally real. In fact, sometimes it is difficult to tell if a website is fictional or not. These websites form the foundation of the game's universe, and are usually the primary storytelling vehicle, although the various media listed above will be used as well, creating a situation where the game's alternate reality and the real world collide.

Important to alternate reality games is the concept of "this is not a game." To be most effective, these games don't advertise themselves as such, and never really admit to being a game at all. The mystery of what's going on and who is behind it all is a major factor, as is the general thrill of discovery (one website leads to another, and another, etc.) for the players.

Admittedly, an alternate reality game is a difficult thing to define concisely.

History and examples of ARGs

- ARGs grew from traditional role playing games or *RPGs*, which first came to prominence with the introduction of Dungeons and Dragons in 1974. Jordan Weisman, co-founder of leading ARG design company 42 Entertainment previously founded leading RPG company FASA in 1980.

- Other roots include reader-influenced online fiction sites. The first of these was the all-text *QuantumLink Serial* by Tracy Reed on AOL (then called Quantum Computer Services), which debuted in 1988, and was played out in online chat rooms, emails and traditional narrative. The series also went by the name The AppleLink Serial and The PC-Link Serial on those services before they were all unified under the AOL brand when Quantum changed its name. After each week's chapter was published, users wrote to author Reed suggesting how they could be part of the story. Each week Reed chose one to a handful of users on each of the three services and wrote them into the story, depicting how they interacted with the fictional characters. The project was personally greenlighted by AOL founder Steve Case and produced by Kathi McHugh. Later titles, the most famous of which was The Spot added photos and video to the stories, but typically featured less user interaction.

- Wizards of the Coast developed some of the first ARGs (before the term was coined) to promote the collectable card game Netrunner in 1996. The first "Webrunner" game, Webrunner: The Hidden Agenda, cast players as futuristic hackers breaking into the Futokora Corporation's computers. The sequel Webrunner II: The Forbidden Code turned the tables, casting players as security agents defending against hackers. Wizards did several more such games in the late 1990s for its games BattleTech and Magic: The Gathering.

- The first wildly successful ARG was a game developed to promote the movie A.I. by a small team at Microsoft. At its peak, this game was being played simultaneously by many thousands of users, and created something of a cultural phenomenon when it was released; it was referred to by its developers (and now by players, as well) as "The Beast", and is considered the granddaddy of the genre it created.

- One of the earliest large-scale examples of this was the EA game known as Majestic. Though the game itself suffered commercial failure and had significant problems, it remains a useful initial case study for the genre. While development on Majestic began before "The Beast" was launched, Majestic was made available to the public at the tail end of this A.I.-related campaign. Change Agents Out of Control was an early ARG that actually grew from the demise of Majestic.

- Lockjaw was a game written by former Cloudmakers and was one of the first successful independent ARGs.

- In September 2002, ABC brought alternate reality gaming to the television screen with the show Push, Nevada. Produced by Ben Affleck and Matt Damon, the show created a fictional city in Nevada, named Push. When advertising the show, they advertised the city instead, with billboards, news reports, company sponsors, and other realistic life-intruding forms. During each episode of the show, highly cryptic clues would be revealed on screen, while other hidden clues could be found on the city's website. Unfortunately, the show was cancelled mid-season, and all of the remaining clues were released to the public. Clever watchers eventually figured out that the show would still be paying out its $1 million prize during Monday Night Football. The last clue was revealed during halftime, prompting those fortunate enough to have solved the puzzle to call a telephone number. The first person to call received $1 million.

- A more recent ARG (2004) is the I Love Bees (also known as Haunted Apiary) ARG, which was developed in relation to the Xbox game Halo 2 and set in the vast fictional universe that has grown around the Marathon-Halo franchise. This ARG departed from the traditional puzzle-led form to be more story-led. the *Haunted Apiary* is currently regarded to have been the most successful ARG to date, in terms of audience size and participation. Its authors, who also created The Beast, had in the interim founded an ARG design and development company, 4orty 2wo Entertainment.

- Likely in response to 'I Love Bees', 2Advanced Studios developed another ARG, Channel 51, which was centered around a fictional company called Orbis Labs. This ARG was used as a promotional vehicle for Nintendo's GameCube game *Metroid Prime 2: Echoes*.

- Metacortechs was a game related to *The Matrix*. At first glance, the website appeared to be a virtual reality company, but as players dug deeper, it got much more sinister.

- Acheron - Could you decide? Players were led on a rough and tumble adventure to locate Jake, a graduate assistant at New River University. Along the way, they discover a story of intrigue, time travel, and betrayal that caught everyone by surprise.

- October 2004, the *ReGenesis Extended Reality game* launched in tandem with the Canadian television series ReGenesis. Clues and stories from the series sent players online to stop a bioterrorist attack.

- In January 2005, *This Is Not A Game: A Guide to Alternate Reality Gaming* was released, the first book to cover the phenomenon of Alternate Reality Gaming in detail, providing an overview and history of the genre, and tips for players and would-be puppetmasters.

- March 29, 2005, The Art of the Heist launched. Developed as a promotional ARG for Audi, The Art of the Heist took things to a new level with multiple realworld events/missions and extensive media placement.

- April 2005, Perplex City began in earnest, after a years' worth of teaser/previews. Perplex City is currently still playing.

- September 24, 2005, a poker-themed ARG called Last Call Poker launched. It is considered to be 4orty 2wo Entertainment's first major ARG since I Love Bees, and featured both online poker play and cemetery-based live events and poker tournaments across the country.

Terminology

ARG - the abbreviation for "alternate reality game", coined by players of the Lockjaw game
ARGonaut - a term sometimes used by players of ARGs to refer to themselves
The Beast - the promotional game for the movie A.I.
Beasting - to play an ARG (deprecated)
Cloudmakers - the original group that took on The Beast. They are

also credited with coining most of the terminology.
Collective Detective - an early term that refers to the group of players gathered for discussion and puzzle solving. The premise behind this is that if there are enough eyes, ears, and minds, the amount of knowledge held by the whole groups is enough to solve any problem.
Curtain - the layers of plot, technology and social contract between the players and the PuppetMasters
Guide - a narrative of the experiences of gameplay, including the process of clue discovery and puzzle solving.
PuppetMasters - the usually secret group that controls an ARG (usually referred to as "PMs")
Rabbit hole - the initial page or clue that drives the player into the game.
Search Opera - A type of ARG that behaves more as a scavenger hunt, where players use search engines to find clues and solve puzzles relevant to the ARG
Trail - a reference list of sites, clues and other items found during gameplay

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Car Games

Car games (also called travel games) are games played to pass the time on long car journeys, often started by parents to amuse restless children. Such games include:

Car Bingo
Car Cricket
Car Numberplate Game
Find the Alphabet
FizzBuzz
I Packed my Bag
I spy
Padiddle
Slugbug/Punch Buggy
Three for a Pig

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Children's Games

Some children's games include:

Ball tag
Blind Man's Bluff

British Bulldog
Bullrush game
Butts Up
Cat's cradle
Chain tag
Cocky Olly
Conkers
Cops and robbers
Doctor
Dodge ball
Duck Duck Goose aka Duck, Duck, Gray Duck
Ducks and Drakes aka Skipping stones
Flashlight tag
Follow the Leader
Four square
Forty Forty
Gite (Indian)
Heads Up, Seven Up
Hide and seek
Hopscotch
Jump rope
Keep Away
Kiss chase
Leapfrog
Mary Mack
Mother May I?
Musical chairs
Musical statues
Postman's Knock
Queenie, Queenie, who's got the ball?
Red Hands
Red light, green light
Red Rover
Sardines
Simon Says
Sleeping lions
Smear the queer
Tag
Witch's Casket

These are informal games, most often played by children without adult organisation, sometimes even despite the disapproval of adults. They are part of children's street culture. There is a list of children's party games in the article on party games.

See also

- clapping game
- singing game
-

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Clapping Games

A **clapping game** is type of cooperative (ie non-competitive) game which is generally played by two players.

The template of a standard clapping game is for the participants to strike each other's hand(s) in a rhythmic fashion while reciting a rhyme. The clapping pattern is often improvised. The rhyme is very similar to a skipping rhyme.

The clapping games

Hello, Operator...

Miss Mary had a steamboat the steamboat had a bell When Mary went to Heaven her steamboat went to Hello operator please give me number nine And if you disconnect me, I'll kick you from Behind the yellow curtain, there was a piece of glass Miss Mary sat upon it and broke her little Ask me no more questions, please tell me no more lies The boys are in the washroom room doing up their Flies are in the city, bees are in the park, Boys and girls are having fun, kissing in the,D-A-R-K D-A-R-K D-A-R-K DARK, DARK, DARK

Cici, My Playmate...

Cici, my playmate Come out and play with me And bring your dollies, three Climb up my apple tree Slide down my rainbow Into my cellar door And we'll be jolly friends Forever more, more, shut the door!

My mother your mother...

My mother your mother lives down street 18, 19 marbles each and every time they had a fight this what they told me girls are sexy made out *of pepsi boys are rotton made out of cotton girls go to mars to get more bras and boys go to jupiter to get more stupider.*

Oh Mella...

oh Mella (CLAP 3 TIMES) kiss a fella (CLAP 3 TIMES)lazy boys (CLAP 3 TIMES)ping pong (CLAP 3 TIMES (FASTER NOW) oh mella kiss a fella lazy boys ping pong turn around touch the ground freeze

Boys are...

Boys are cheats and liars they're such a big disgrace they will tell you anything to get to second base--ball, baseball he thinks he's gonna score if you let him go all the way, then you are a hor--ticulturist studies flowers, geologist studies rocks the only thing he wants from you is a place to put his cock--roaches, beetles, butterflies and bugs nothing makes him happier than a giant pair of jug--glers and acrobats and a dancing bear named chuck all guys really want to do is--forget it, no such luck.

Apple on a stick...

Apple on a stick makes me sick makes my heart go 246 not because your dirty and not because your clean not because you kiss a boy behind a magazine boys boys having fun along came a teacher with a big fat bum she can wiggle she can wobble and do the splits I bet ya I bet ya she can't do this close your eyes and count to ten if you mess it up your a big fat hen 1 2 3 4 5 6 7 8 9 10 your a big fat hen!'

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Conversation Games

Conversation games are games of conversation. They are usually created by a group of bored teenagers and are also sometimes used on dates. They can also be played on the Internet, and often are.

- The dozens - A very popular game originating from the Hip Hop culture.
- I Have Never game - A popular game among university students. A group of people each tries to better the previous person by saying something in a suggestive way. The goal is for the rest of the group to remain guessing whether it is true or not.

Example - "I have never gone skinny dipping"

It was recently featured on an episode the popular TV show Veronica Mars season 1, and Family Guy episode The Perfect Castaway.

- What Are They Thinking - a game featured in the movie Wild Orchid. You point out a person in the room then ask the person you are with to describe what they are thinking, how are they feeling, etc. You can also ask what do you think they work as, are they happy at work, and so on about other topics in that person's life.

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Counting-out Games

A **counting-out game** is a simple game intended to select a person to be "it", often for the purpose of playing another game. Some counting-out games are

- Rock, Paper, Scissors
- Odd or Even
- Coin flipping
- Drawing straws - player with the shortest straw loses.
- Buzz

Many such games involve one person pointing at each participant in a circle of players while reciting a rhyme. A new person is pointed at as each word is said. The player who is selected at the conclusion of the rhyme is "it" or "out". In an alternate version, the circle of players may each put two feet in and at the conclusion of the rhyme, that player removes one foot and the rhyme starts over with the next person. In this case, the first player that has both feet removed is "it" or "out". These are often accepted as random selections because the number of words has not been calculated beforehand, so the result is unknown right up until someone is selected.

Some common rhymes

- Eeny, meeny, miny, moe
- Tea Cup Saucer Out
- Tinker, Tailor - Traditionally played in England.
- One potato, two potato - players may start with both fists (to

resemble potatoes) in, so have to be got twice to be out.

One potato, two potato
Three potato, four,
Five potato, six potato,
Seven potato, more,
One big bad spud.

- Ink-a-bink (Last two lines added if the chooser happens to like the person singled out by the "stink")

Ink-a-bink
A bottle of ink
Cork fell out and you stink
My mother told me to pick the very best one and
You are not it

- Bubblegum, Bubblegum

Bubblegum, bubblegum,
In a dish,
How many pieces,
Do you wish?

Whomever the rhyme ends with chooses a number, and that many "pieces" are counted. The person on whom the last number falls is out.

- Inky Binky Bonky

Inky binky bonky,
Daddy had a donkey,
Donkey died, daddy cried,
Inky binky bonky.

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Creative Games

In a **creative game** the emphasis is on fun, creativity and exploration rather than on winning or education. As so often, the border to educational games is fluent. The main difference to educational games is that the player can create new things which are not in a list of given items.

A creative game has no end configuration to be achieved after which the game stops. However, the player may face many puzzle-like problems during his/her play. Hence this topic is closely related to puzzles.

Many creative games are one-player games.

Examples of creative games

- constructions sets
- programming games
- Spirograph

See also

- computer game
- educational game
- game
- list of puzzle-based computer and video games
- one-player game
- puzzle

Home | Up | Construction Set | Drawing | Play-Doh | Programming Games | Spirograph

Construction Set

A **construction set** is a toy that is a collection of separate pieces that can be joined together in many different ways, for example to create model cars, spaceships or houses. The things that are built are sometimes used as toys once completed, but for many players the most fun is to be had from building things of their own designs, so that old models often get broken up in order to reuse pieces for new models.

Construction sets such as the all time classic LEGO building blocks and Lincoln Logs have long been an appreciable child's pastime. Anatomically correct models could also be considered construction sets, the hobby of constructing these models is shared by boys and girls, men and women, of all ages. If one were to extend the definition of construction sets even further it might also include Build it Yourself houses, or any number of sets sold to be assembled into useful shelters or furniture. Construction sets appeal to people who like working with their hands, puzzle solvers, and imaginative sorts.

Drawing

Drawing is a means of making an image, using any of a wide variety of tools and techniques. It generally involves making marks on a surface by applying pressure from a tool, or moving a tool across a surface. Common tools are graphite pencils, pen and ink, inked brushes, wax color pencils, crayons, charcoals, pastels, and markers. Digital tools which simulate the effects of these are also used. The main techniques used in drawing are: line drawing, hatching, crosshatching, random hatching, scribbling, stippling, and blending.

Definitions

Drawing is generally considered distinct from painting, in which colored pigments are suspended in a liquid medium and usually applied with a brush. Etching is similar to drawing but differs in that the tool digs into the surface, which is then used to make prints on a separate surface.

One standard for differentiating drawing from painting is that it does not permit the artist to mix colors before applying them; colors can only be blended on the drawing surface, usually by overlaying one upon the other or by putting them close enough together that the eye "mixes" them.

These distinctions are somewhat arbitrary and subject to change; some artists refer to fully-rendered pastel and colored-pencil compositions as "paintings", and in nineteenth century usage "drawing" also encompassed the use of watercolors. In digital media, "drawing" often refers to the use of vector-based graphics programs, as distinguished from bitmap-based "painting" software, but this distinction is not universal.

Subject matter

All drawings are representational, depicting objects or scenes which the artist views, remembers, or imagines. They may be realistic to the point of emulating photography (e.g. traditional portraits), looser approximations of reality (e.g. sketches), highly stylized (e.g. cartoons, caricatures), or abstract (e.g. automatic drawing, entoptic graphomania).

Media

The medium is the means by which ink, pigment, or color are delivered onto the drawing surface. Most drawing media are either dry (e.g. graphite, charcoal, pastel, Conté, silverpoint), or water-based (marker, pen and ink). Watercolor pencils can be used dry like ordinary pencil, then moistened with a wet brush to get various painterly effects. Very rarely, artists have drawn with (usually decoded) invisible ink.

Materials

Paper comes in a variety of different sizes and qualities, ranging from newspaper grade for practice up to high quality and relatively expensive paper sometimes sold as individual sheets. Papers can vary in texture, hue, acidity, and strength when wet. Smooth paper is good for rendering fine detail, but a more "toothy" paper will hold the drawing material better. Thus a more coarse material is useful for producing deeper contrast.

For pen and ink work, typing paper is often used for practice drawings, but heavier paper holds up better. Bristol board makes a hard surface that is especially good for ink or fine detailed graphite drawing. Coldpressed watercolor paper is sometimes favored for ink drawing due to its texture. Tracing vellum is often used for experimenting on top of a pencil drawing, prior to committing a technique to the final page.

Various tools are routinely used in the process of drawing. These include a pencil sharpener, sandpaper, kneaded eraser, blending stubs, and chamois. Other tools that sometimes prove useful are tracing paper, a circle compass, ruler, frisket film, fixative, and drafting tape. The use of an easel or slanted table reduces the distorting effects of perspective.

Aspects of the drawing process

Applying media

Prior to working on an image, the artist will likely want to gain an understanding of how the various media will work. The different drawing implements can be tried on practice sheets to see what type of pattern they create, and how to apply the implement in order to produce varying tones.

The stroke of the drawing implement can be used to control the appearance of the image. Ink drawings typically use hatching, which consists of groups of parallel lines. Cross-hatching uses hatching in two or more different directions to create a darker tone. Broken hatching, or lines with intermittent breaks, is used to form lighter tones, and by controlling the density of the breaks a graduation of tone can be achieved. Finally stippling, or random placement of dots on a page, can also be used to produce a texture or shade.

Sketch drawings use similar techniques, although with pencils and drawing sticks continuous variations in tone can be achieved. For best results the lines in a sketch are typically drawn to follow the contour curves of the surface, thus producing a depth effect. When drawing hair, the lines of the sketch follow the direction of the hair growth.

Typically a drawing will be filled in based on which hand the artist favors. A right-handed artist will want to draw from left to right in order to avoid smearing the image. Sometimes the artist will want to leave a section of the image blank while filling in the remainder of the picture. A *frisket* can be used for this purpose. The shape of the area to be preserved is cut out of the frisket, and the resulting shape is then applied to the drawing surface. This will protect the surface from receiving any stray marks before it is ready to be filled in.

Another method to preserve a section of the image is to apply a spray-on *fixative* to the surface. This will hold loose material more firmly to the sheet and prevent it from smearing. However the fixative spray typically uses chemicals that can negatively affect the respiratory system, so it should be employed in a well-ventilated area such as outdoors.

Tone

Shading is the technique of varying the tonal values on the paper to represent the shade of the material as well as the placement of the shadows. Careful attention to reflected light, shadows, and highlights can result in a very realistic rendition of the image.

Blending uses an implement to move the drawing material on the paper so as to hide the original drawing strokes. This can only be done when drawing with a material such as graphite or charcoal that is not permanently attached once applied. When shading and blending is needed, the artist can employ a combination of a tortillon blending stump, chamois or soft tissue, and a specialized putty-rubber eraser. The chamois cloth in particular is useful for creating smooth textures, and for removing material to lighten the tone.

There are a number of methods for producing texture in the picture. In addition to choosing a suitable paper, the type of drawing material and the drawing technique will result in different textures.

Texture can be made to appear more realistic when it is draw next to a contrasting texture. Thus a coarse texture placed next to a smoothly blended area will appear more notable. A similar effect can be achieved by drawing different tones in close proximity. A light edge next to a dark background will stand out to the eye, and almost appear to float above the surface.

In most drawing mediums, but especially in ink, realistic renditions of an object or structure avoid outlinining the form and features. Otherwise the image may resemble a paint-by-numbers figure from a coloring book. Instead the shape of the structure is portrayed almost entirely through tones and shading, including contrast with the background.

Layout

Measuring the dimensions of a subject while blocking in the drawing is an important step in producing a realistic rendition of the actual subject. A straight drawing implement held horizontally or vertically can be used to measure the angles of different sides. These angles can be reproduced on the drawing surface and then rechecked to make sure they are accurate. Another form of measurement is to compare the relative sizes of different parts of the subject with each other. A finger placed at a point along the drawing implement can be used to compare that dimension with other parts of the image.

A grid can be used to produce a more accurate portrayal of a photograph. The image is subdivided into equally spaced horizontal and vertical lines. A scaled version of these lines is drawn lightly on the paper, and the outlines of the significant features are copied onto the drawing. A similar approach when using an easel is to mount a small, heavy paper frame through which the artist can view the scene. The image on the paper is then scaled in reference to this frame.

When attempting to draw a complicated shape such as a human figure, it is helpful at first to represent the form with a set of primitive shapes. Almost any form can be represented by some combination of the cube, sphere, cylinder, and cone. Once these basic shapes have been assembled into a likeness, then the drawing can be refined into a more accurate and polished form. The lines of the primitive shapes are removed and replaced by the final likeness.

A more refined art of figure drawing relies upon the artist possessing a deep understanding of anatomy and the human proportions. A trained artist is familiar with the skeleton structure, joint location, muscle placement, tendon movement, and how the different parts work together during movement. This allows the artist to render more natural poses that do not appear artificially stiff. The artist is also familiar with how the proportions vary depending on the age of the subject, particularly when drawing a portrait.

Perspective

Linear perspective is a method of portraying objects on a flat surface so that the dimensions shrink with distance. The parallel, straight edges of any object, whether a building or a table, will follow lines that eventually converge at infinity. Typically this point of convergence will be along the horizon, as buildings are built level with the flat surface. When multiple structures are aligned with each other, such as buildings along a street, the horizontal tops and bottoms of the structures will all typically convert at a vanishing point.

When both the fronts and sides of a building are drawn, then the parallel lines forming a side converge at a second point along the horizon (which may be off the drawing paper.) This is a "two-point perspective". Convering the vertical lines to a point in the sky then produces a "three-point perspective".

Depth can also be portrayed by several techniques in addition to the perspective approach above. Objects of similar **size** should appear ever smaller the further they are from the viewer. Thus the back wheel of a cart will appear slightly smaller than the front wheel. Depth can be portrayed through the use of **texture**. As the texture of an object gets further away it becomes more compressed and busy, taking on an entirely different character than if it was close. Depth can also be portrayed by reducing the amount of contrast of more distant objects, and also by making the colors more pale. This will reproduce the effect of **atmospheric** haze, and cause the eye to focus primarily on objects drawn in the foreground.

Artistry

The composition of the image is an important element in producing an interesting work of artistic merit. The artist plans the placement of elements in the art in order to communicate ideas and feelings with the viewer. The composition can determine the focus of the art, and result in a harmonious whole that is aesthetically appealing and stimulating.

The illumination of the subject is also a key element in creating an artistic piece, and the interplay of light and shadow is a valuable method in the artist's toolbox. The placement of the light sources can make a considerable difference in the type of message that is being presented. Multiple light sources can wash out any wrinkles in a person's face, for instance, and give a more youthful appearance. In contrast, a single light source, such as harsh daylight, can serve to highlight any texture or interesting features.

When drawing an object or figure, the skilled artist pays attention to both the area within the silhouette and what lies outside. The exterior is termed the negative space, and can be as important in the representation as the figure. Objects placed in the background of the figure should appear properly placed wherever they can be viewed.

A study is a draft drawing that is made in preparation for a planned final image. Studies can be used to determine the appearance of specific parts of the completed image, or for experimenting with the best approach for accomplishing the end goal. However a well-crafted study can be a piece of art onto itself, and many hours of careful work can go into completing a study.

History

People have made drawings since prehistoric times. This art form first gained widespread popularity among European artists during the 1400's, when paper became generally available. Since that time, each century has produced artists who have created great drawings.

Masters of drawing in the 1400's and 1500's included Leonardo da Vinci, Albrecht Dürer, Michelangelo, and Raphael. During the 1600's, Claude, Nicolas Poussin, Rembrandt, and Peter Paul Rubens created important drawings. In the 1700's, great drawings were produced by Jean-Honoré Fragonard, Francisco Goya, Giovanni Battista Tiepolo, and Antoine Watteau. The masters of drawing during the 1800's included Paul Cézanne, Jacques Louis David, Edgar Degas, Theodore Gericault, Jean Ingres, Odilon Redon, Henri de Toulouse-Lautrec, and Vincent Van Gogh. Great drawings in the 1900's have been created by Max Beckmann, Willem De Kooning, Jean Dubuffet, Arshile Gorky, Paul Klee, Oscar Kokoschka, Henri Matisse, Jules Pascin, Pablo Picasso, and Jackson Pollock.

Computer software

Drawing may also be done on a computer. Digital art is fast becoming one of the most popular means of illustration. See, for example, the computer illustrations of Peter Welleman.

Here are some common software programs used for computer illustration:

Adobe Photoshop
Adobe Illustrator
Paint Shop Pro
Corel Painter
Pixia
Microsoft Paint
The GIMP
Open Canvas

Notable drawing artists

Michelangelo Buonarroti
Maurits Cornelis Escher
Albrecht Dürer
Andrew Loomis
Rembrandt
Eugeen Van Mieghem
Leonardo da Vinci

References

- J. D. Hillberry, *Drawing Realistic Textures in Pencil*, North Light Books, 1999, ISBN 0-89134-868-9.
- Frank Lohan, *Pen & Ink Techniques*, Contemporary Books, 1978, ISBN 0-8092-7438-8.
- World Book, Inc. *The World Book Encyclopedia Volume 5*, 1988, ISBN 0-7166-0089-7.

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Play-Doh

Play-Doh is a commercial plastic modeling compound similar in texture to bread dough that has been sold as a children's toy around the world for a half century. Its exact makeup is a secret, but is primarily a mixture of wheat flour, water, deodorized kerosene or another petroleum distillate (which provides the smooth texture), salt, a drying agent such as borax (which deters mold), an alum-based hardening agent, and colorings and perfume.

It is non-toxic, non-staining, and is soluble in soapy water. When kept in a sealed container, Play-Doh remains pliable, but when exposed to air it hardens in about a day, making it good for children's craft projects. A lot of baby boomers have fond memories of its salty taste.

Play-Doh was invented by Noah McVicker and Joseph McVicker in 1956 and awarded U.S. Patent 3,167,440 in 1965. One of many common products invented by accident, it was meant as a wallpaper cleaner. It was marketed by toy manufacturer Rainbow Crafts, and first sold at the Woodward & Lothrop department store in Washington, DC.

Play-Doh is available in several different colors, and has a distinctive smell and texture. Over 700 million pounds have been sold so far. The product is now owned by American toy giant Hasbro.

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Programming Games

A **programming game** is a computer game, where the player has no direct influence on the course of the game. Instead, a computer program or script is written in order to control the actions of the characters (usually robots or tanks, which seek to destroy each other). Programming games of note include Core Wars, AI Wars

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Spirograph

Spirograph is a trademark of Hasbro, Inc., for a geometric drawing toy, which produces mathematical curves of the variety technically known as hypotrochoids. The word has also been applied to a variety of software applications that display similar curves.

The Spirograph was invented by Denys Fisher, who exhibited it in 1965 at the Nuremberg International Toy Fair. Distribution rights were acquired by Kenner, Inc., who introduced it to the United States market in 1966.

Spirograph consists of a set of plastic gears and toothed rings. The gears fit inside the rings (but not precisely), in such a fashion that they rotate around the inside. To use it, a sheet of paper is placed on a heavy cardboard backing, and one of the plastic pieces is pinned to the paper and cardboard. Another plastic piece is placed so that its teeth engage with those of the pinned piece. For example, a ring may be pinned to the paper and a small gear placed inside the ring (although other arrangements are possible). The point of a pen is placed in a hole in the moving piece, so that it can draw a curved line on the paper as the hole moves. The pen is used both to draw and provide motive force; some practice is required before Spirograph can be operated without disengaging the fixed and moving pieces.

Variations

Variations on the original that have been marketed have been:

- Spiroman (© 1968)
- Spirotot (© 1968)
- Super Spirograph (© 1969)
- Motorized Spirograph (© 1970)
- Magnetic Spirograph (© 1971)
- Spirofoil (© 1971)
- Spiro 2000 (© 1976)
- Spirograph Plus (© 1982)
- Travel Spirograph (© 1988)
- Spirograph Spiromatic (© 1989)
- Mega Spirograph (© 1991)
- Sparkle Spirograph (© 1992)
- Spirograph with Spiroscope (© 1994)
- Color Change Spirograph (© 1995)
- Easy Spirograph (© 1995)
- My First Spirograph (© 1995)
- 3-D Spirograph (© 1996)
- Spirograph Key Chain (© 1998)
- Deluxe Spirograph (© 2002)
- Spirograph Pen (© 2002)
- Spirograph Easy Draw (© 2004)
- Spirograph Tech (© 2004)
- Spirograph Studio

The term "spirograph" has also been applied to the class of curves that can be produced with the drawing equipment, so in this sense it may be regarded as a synonym of hypotrochoid. Also, a particular planetary nebula that displays delicate, poorly-understood, spirograph-like filigree has been nicknamed the Spirograph Nebula.

Lissajous curves

Quite comparable in both mathematical theory and visual appearance are Lissajous curves, which have a wide field of use in sciences such as physics and electrical engineering.

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Drinking Games

Drinking games are games which involve drinking alcoholic beverages. The point is either simply to drink, or to make your opponent drink more than you do, so that they become drunk and drink even more, and so forth. Cottabus is an ancient game involving skill in pouring a swig of wine into a large vessel. A modern variant of Cottabus, known as Arrogance, has players take turns to add as much beverage as they like to a central jug before correctly calling a flip of a coin. Failure to call the coin correctly (or dropping it, a real possibility during the later stages of the game), means the unlucky (or clumsily drunk) player must drink the entire contents of the central jug.

It is not immediately obvious whether the person with the highest intoxication level at the end of the game is the winner, the loser, or both. It largely depends on whether each player has to provide their own beverages or if they share beverages from a common pool.

Common drinking games

Perhaps the simplest drinking games are the ones in which players compete to out-drink each other. Players take turns taking shots, and the last person standing is the winner. Some games have rules involving the "cascade" or "waterfall", which encourages each player to drink constantly from their cup so long as the player before him doesn't stop drinking. Such games can also favor speed over quantity, in which case players might, for example, race to drink a beer the fastest. Games that involve creative thinking (such as naming a sports player whose name begins with a particular letter, for example) might be played under a "drink while you think" rule in which a player must consume his beverage until he can come up with an answer.

Numerous drinking games are based on popular movies, television shows, and even books. The rules for these usually instruct the players to drink when some event occurs, such as a character speaking a catch phrase in comedies, or the use or mention of a particular technology in science fiction. Typically the size of the drink is inversely proportional to the frequency of the event — an event that happens rarely can call for finishing one's current can/bottle. These games might have simple, easily remembered rules, or they might have detailed rules, often available on the Internet.

A generalization of the above can apply to other circumstances in which the participants are observing a situation in which certain predictable events occur, such as a movie, a football game, or other people at a party or in a bar. For example, each player may be assigned the name or number of a football player, and must drink when that name or number is mentioned by the commentators or shown on the screen. Events such as the State of the Union address, the Oscars, and the Eurovision Song Contest (for example) have become targets of such drinking games, often as a means of relieving the monotony of a long event.

Some drinking games, such as Quarters, involve performing certain skills, which become more difficult as the level of intoxication increases. Other drinking games rely on memory; each player must repeat a series of events, and then add to it. If a player repeats the series incorrectly, he or she must take a drink. Another variety is a game that is played constantly throughout a night of drinking, for example, only drinking with your other hand (left hand if you're right-handed, and vice versa). If a player accidentally picks up their glass with the wrong hand, they have to finish their drink. Such games start off simple, but become much more challenging as the game continues, the players get more drunken and their coordination and memory deteriorate.

While a drinking game is in progress, or between games, International Drinking Rules may be in force.

Popular drinking games

Table games

Beer Pong

Beer Pong with paddles

Slam pong

Dartmouth pong

Flip Cup/Boat Race

Word games
I Never | 21 | Fives
Drink while you think

Card games

Kings | President/Asshole

Hi-Lo

Binge drinking games
Keg stand | Keg race
Funneling | Shotgunning
Edward Forty-Hands
Power Hour

Other drinking games

Card games

President (aka Asshole, Presidents & Assholes)
Drunken Snail
King Tut
Drink your face off
Hi-Lo
Kings (similar games: Circle of Death, Ring of Fire)
Pub Crawls
Sheps Deal
Ride the Bus (aka Drunk Driver)
Fuck the Dealer
Beeramid
The Good, the Bad and the Ugly
Up and Down the River
Old Maid
Beer Pong Card Game
Cross the River

Dice games

Beer Die
Liar's dice
Mr. Three
5 Die
Seven-Eleven Doubles
Tablero da Gucci

Quarters Games

Quarters
Robopound
Sandstorm
Baseball
Wall Destroyer

Skill, memory and repetition

Drink while you think
21
Beer-In-Hand - a modification to any pocket billiards game
Buffalo
Caps
Captain Paf or Cardinal Puff
Disassociation/Association - a simple word game in the vain of Simple Simon.
FizzBuzz
Strat - an elaborate, score-based variant of Quarters
Bunnies drinking game
The yee-hah game
Fuzzy Duck
One fat hen
Horsepucky or Cake
Bouncing coins
Bizu-Bizu
Matchboxes
Who Shit
Roman Numerals - a.k.a. Poo Bum Dickie
Man Your Spacesuits
Ten Minute Warning
Zumi-Zumi

Movies, television, music, etc.

The DVD for the comedy movie Eurotrip (2004) has a full-length audio commentary wherein the directors play a drinking game to their own movie.
"Hi, Bob": a sip is taken whenever a character on The Bob Newhart Show says the name "Bob," and the entire drink is consumed when the sentence "Hi, Bob" is spoken.
Roxanne (drinking game)
Withnail and I drinking game
Deadwood (everyone drinks everytime a character says "cocksucker")
Troy (2003): Everyone drinks when a character says "honor"

Speed consumption

Funneling
Power Hour and Centurion
Drink My Battleship
Rock, Paper, Scissors
Rogaining
Shotgunning
Edward Forty-Hands
Boat Race

Games to decide who buys the next round

Spin the Ghillie
Spoof
The Jug Game

Other party and pub games

Beer Hunter
Beer Pong or Lob pong (a drinking game requiring the use of ping pong balls)
You Drink
Bottle polka aka Hi-Ho!, Pass the bottle, etc
Chicken Finger Drinking Game
Flip Cup
Georging
Goon of Fortune
KOTRT (Knights of the Round Table) (another drinking game

requiring the use of ping pong balls)
Pub golf
Pennying
Sink the Titanic
Snow White and the Seven Dwarves
Vodka barman
Beer Frizz
Landmines
I Never
Beersketball (a game based on Baseketball and Beer Pong)
Peanuts (Drinking Game)

Conversion of other games

Almost any game of skill or chance that does not traditionally involve drinking can theoretically be converted into a drinking game. In some games, conversion could be as easy as letting the winner distribute shots to the other players, while in more complicated games, shots can be forced upon players for specific events in the game.

For example, in the game of chess, players may have to take drinks when one of their pieces are captured (or perhaps the opposite, where they have to drink upon capturing a piece). In a popular variant of baseball called **Beer Ball**, players have to drink some beer every time they reach a base.

Players should exercise caution before choosing to add drinking to any sport that could be dangerous under intoxication.Home | Up

Economic Games

An **economics game** is a game based on working with a simulation of the elements of an economic structure.

Notable economics games:

Monopoly
Informatist
Capitalism
Capitalism 2
The Global Economics Game
Jones In The Fast Lane

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Game Show

A **game show** is a radio or television program, involving members of the public or celebrities, sometimes as part of a team, playing a game, perhaps involving answering quiz questions, for points or prizes. In some shows contestants compete against other players or another team whilst other shows involve contestants striving alone for a good outcome or high score. Game shows often reward players with prizes such as cash, or holidays and goods and services provided by the show's sponsors. Early television game shows descended from similar programs on broadcast radio.

Types

There are several basic genres of game shows with a great deal of crossover between the different types.

- The simplest form of game show is a *quiz show* whereby people compete against each other by answering quiz questions or solving puzzles. Quiz shows usually involves members of the public, but sometimes special shows are aired in which celebrities take part and the prizes are given to charity. Wheel of Fortune and Jeopardy! are examples. Some quiz shows, such as the word games Password and Pyramid, pair celebrities and non-notable citizens.
- A *panel game* usually involves a celebrity panel answering questions about a specialist field such as sport or music and is often played for laughs as much as points. Match Game, a CBS daytime show from the 1970's is one such example. Other examples include What's My Line and To Tell The Truth.
- The third kind of game show involves contestants completing stunts or playing a game that involves an element of chance or strategy in addition to, or instead of, a test of general knowledge.
- *Reality game shows* have become popular in recent years. In a reality show the competition usually lasts several days or even weeks and a competitor's progress through the game is based on some form of popularity contest, usually a kind of disapproval voting by their fellow competitors or members of the public.
- *Dating game shows*, the original reality games, in which the prize is typically a well-funded dating opportunity that one can only pursue with the individual one has 'won' on the show. They are

also a type of date auction where competitors compete for dates not with money but with seductive powers or attractiveness or the promise of an enjoyable date or even ultimately marriage.

History

In the US, television game shows fell out of favor in the 1950s after it was revealed that favored contestants on The $64,000 Question, Twenty One and other shows had been given answers and coached by the producers. They came back into favor in the 1960s by adopting merchandise prizes of far less value and by emphasizing larger numbers of simple questions, or physical contests without an advantage.

In the middle of the 1960s, Chuck Barris conceived a new genre in which the competitor's personal life became part of the show. They were the forerunners of today's reality game show. The prize was typically romantic opportunity (The Dating Game — the first dating game show) or fame (The Gong Show) rather than cash. One of his famous shows, The Newlywed Game, actually led to some divorces. This genre virtually disappeared from US screens in the 1990s. Blind Date, the British version of *The Dating Game*, remained popular in the United Kingdom.

The height of the game show era began in the early 1970s, thanks in part to the success of popular game shows like The Price Is Right, Match Game, The Joker's Wild and The $10,000 Pyramid. Many of these game shows provided amazing game show sets filled with flashing chase lights and sometimes flashing neon lights. This era of game shows officially ended in the 1990s, leaving The Price Is Right as the only daytime network game show remaining on U.S. television. In syndication, however, a handful of game shows continue to be popular, including Wheel of Fortune and Jeopardy!, and to a lesser extent, Who Wants to be a Millionaire and Family Feud. (All of those shows were originally network daytime shows except for *Millionaire,* which was a nighttime summer limited-run series that became an unexpected breakout hit.)

Another major element in a game show is score displays. The most famous of these displays is the "eggcrate", which consists of seven rows of five bulbs each per digit. The eggcrate display has been used on more game shows than any other score display in history, and is still used today on The Price Is Right. In recent years, however, video displays have replaced the eggcrate, especially from Sony shows. Wheel of Fortune adopted the look in 2001, followed the next by Jeopardy!. CBS also adopted video screens in 2001 for Hollywood

Squares, a show produced by its King World division. Of the major quiz producers, RTL Television has been the major holdout from this change, as its two US game shows use eggcrate displays.

In Japan a number of shows emerged that defy classification by most standards. For instance, in one infamous show, failing to answer a question correctly led to one's own mother being buried in tons of rotting fish. In another, those who failed to answer questions correctly were dumped at locations remote from transport or assistance, e.g. in the Arctic, and had to perform such feats as drinking beer while sitting on blocks of ice — first one to run to the outhouse was left behind. In a show colloquially called *Strip Questions*, a nude woman stands behind a pane of glass with strips of paper embedded in it; every time she misses a question, one strip of paper is pulled away.

The reality game shows concept really took off in the 2000s with shows like Survivor, Big Brother and their clones. Planet 24 television (owned by Bob Geldof) devised the concept of Survivor but were unable to sell it to a British or American broadcaster. It was eventually taken up in 1997 by Sweden as Expedition Robinson. The format was an immediate hit in other Scandinavian countries and it soon caught on around the world. These shows combine elements of reality show and older reality game shows with traditional game-show elements of physical competitions by contestants.

Some shows (e.g. The Weakest Link) exploit a disapproval voting system similar to the reality game show, and play up the realistic confrontation between contestants, but are in fact just conventional game shows, where no bodily torture or emotionally stressful situation is created, other than the failure to answer some question or impress hosts. Dog Eat Dog was even publicised as a reality show despite being basically a revamp of The Krypton Factor with a variant of disapproval voting added.

Card games, especially poker and to a lesser extent blackjack, have recently become the basis for a number of popular shows on various U.S. broadcast and cable/satellite networks. Although these shows appear to meet the third definition above ("a game that involves an element of chance or strategy in addition to, or instead of, a test of general knowledge") an interesting controversy has erupted over whether these "casino games" should be considered game shows. A question-and-answer element is present in Card Sharks, Strip Poker, Gambit and Top Card, but not in Super Pay Cards!.

Gameshows around the world

Argentina

Australia

A Question Of Sport (Network Ten - 1995-1996)
All About Faces (Nine Network - 1971)
All-Star Squares (Seven Network - 1999)
Almost Anything Goes (Network Ten - 1976-1978) (See "It's a Knockout")
A*mazing (Seven Network - 1994-1998)
Ampol Stamp Quiz (Nine Network - 1964-1965)
Any Questions? (ABC TV - 1950s)
Australia's Brainiest Kid (Ten 2004-)
Battle Of The Sexes (Network Ten - 1998)
The Better Sex (Nine Network - 1978)
Big Nine (Nine Network - 1969-1970)
Big Square Eye (ABC TV - 1991-1993)
Blankety Blanks (Network Ten - 1977-1980, Nine Network - 1985-1986, 1996)
Blind Date (Network Ten - 1968-70, Seven Network - 1974, Network Ten - 1991)
Blockbusters (Seven Network - 1991-1994)
Cash Bonanza (Nine Network - 2001)
Casino 10 (Network Ten - 1975-1977)
Catch Us If You Can
Catchphrase and Burgo's Catchphrase (Nine Network - 1997-2001, 2002)
The Celebrity Game (Nine Network - 1969, Network Ten - 1976-1977)
Celebrity Squares (Network Ten - 1967, Nine Network - 1975-1976)
Celebrity Tattletales (Seven Network - 1980)
Coles £3000 Question and Coles $6000 Question (Seven Network - 1960-1971)
Concentration (Nine Network - late 1950s to 1967, Seven Network 1970s, 1997)
Crossfire (Nine Network - 1987-1988)
The Daryl and Ossie Show (Network Ten - 1978)
Does Father Know Best? (ABC TV - 1950s)
Dog Eat Dog (Seven Network - 2002)
Don't Forget Your Toothbrush (Nine Network - 1995)
Double Dare (Network Ten - 1989-1992)
Double Your Dollars (Nine Network - 1965)
Download (Nine Network - 2000-2002)
The Dulux Show (Seven Network - 1957)
EC Plays Lift Off (ABC TV - 1994)

Fairway Fun (Nine Network - 1960s)
Family Bowl Quiz (ABC TV - 1969)
Family Double Dare (Network Ten - 1989)
Family Feud (Nine Network - 1977-1984, Seven Network - 1989-1996)
The Family Game (Network Ten - 1967)
Flashback (ABC TV - 1983, 2000)
Flashez (ABC TV - 1976-1977)
Ford Superquiz (Nine Network - 1981-1982)
Free for All (Nine Network - 1973)
Gambit (Nine Network - 1974)
Generation Game
Generation Gap (Network Ten - 1969)
Get The Message (Network Ten - 1971-1972)
Gladiators (Seven Network - 1995-1996)
The Golden Show (Nine Network - 1960s)
The Gong Show (Network Ten - 1976)
Good News Week (ABC TV - 1996-1998, Network Ten - 1999-2000)
Great Temptation (Seven Network - 1970-1976)
The Great TV Game Show (Network Ten - 1989)
Greed (Network Ten - 2001)
Guess What? (Nine Network - 1992-1993)
Have A Go (Seven Network - 1987)
High Rollers (Seven Network - 1975)
Hot Streak (Seven Network - 1998)
I Do I Do (Network Ten - 1996)
It Could Be You (Nine Network - 1960-1967, 1969, 1982)
It Pays To Be Funny (Seven Network - 1957-1958)
It's a Knockout (Network Ten - 1985-1987)
It's Academic (Network Ten - 1968-1970, Seven Network - 1970-1978)
I've Got A Secret (Network Ten - 1966, 1968-1969)
Jeopardy! (Network Ten - 1970-1978, 1993)
Jigsaw (Nine Network - 1960s)
Keynotes (Nine Network - 1964, 1992-1993)
The Krypton Factor (ABC TV - 1987)
Let's Make A Deal (Nine Network - 1968-1969, 1977, Network Ten - 1991)
Letterbox and $50,000 Letterbox (Seven Network - 1963, 1981)
Letter Charades (Nine Network - 1967)
Little Aussie Battlers (Nine Network - 10 February, 1998) (one off special)
Long Play (Network Ten - 1977)
The Love Game (Seven Network - 1984)
The Main Event (Seven Network - 1991-1992)
Man O Man (Seven Network - 1994)

The Marriage Game (Network Ten - 1966-1972)
Mastermind (ABC TV - 1978-1984)
Match Game (Network Ten - 1960s)
Matchmates (Nine Network - 1981-1982)
Micro Macro (ABC TV - 1978)
Million Dollar Chance Of A Lifetime (Seven Network - 1999-2000)
Mind Twist (Network Ten - 1992-1993)
Money Makers (Network Ten - 1971-1973, 1982)
My Generation (Nine Network - 1995-1996)
Name That Tune (TCN9 - 1956-1957, 1975) (The first game show on Australian television. Aired only in Sydney)
National Star Quest (1978 - Talent show with a country theme. Made in Wollongong, aired on regional TV stations)
New Faces (Nine Network - 1963-1985, 1989-1990, Network Ten - 1992-1993)
The Newlywed Game (Network Ten - 1968, Nine Network - 1987)
Now You See It (Seven Network - 1985-1993, Nine Network - 1998-1999)
Opportunity Knocks (Seven Network - 1976)
The Oz Game (ABC TV - 1988-1989)
Pass The Buck (Nine Network - 2002)
Perfect Match (Network Ten - 1978, 1984-1989, Seven Network - 2002)
Personality Squares (Network Ten - 1967-1969, 1981)
Pick A Box (Seven Network - 1957-1971)
Pick Your Face (Nine Network - 1999-2003)
Play Your Cards Right (Seven Network - 1984)
Play Your Hunch (Nine Network - 1962-1964)
Playcards (Network Ten - 1969)
Pot Luck (Network Ten - 1987)
Pot Of Gold (Network Ten - 1975-1978)
Press Your Luck (Seven Network - 1987-1988)
The Pressure Pak Show (Seven Network - 1957-1958)
The Price Is Right (ATN7 - 1957-1959, GTV9 - 1958, Seven Network - 1963, Network Ten - 1973-1974, Seven Network - 1981-1986, Network Ten - 1989, Nine Network - 1993-1998, 2003-2005)
Pyramid Challenge (Network Ten - 1978)
Quest (ABC TV - 1976-1978)
The Quiz Kids (Seven Network - 1964-1968)
Quiz Master (Seven Network - 2002)
Race Around The World (ABC TV)
Ripsnorters - (Seven Network - 1997)
RockWiz
Sale of the Century (Nine Network - 1980-2001)

Say G'day
Say When (Nine Network - 1962-1964)
Search For A Star (Network Ten - 1970-1971, 1981)
Second Chance (Network Ten - 1977)
Shafted (Nine Network - 2002)
Showcase (Network Ten - 1965-1970, 1973-1974, 1978)
Spending Spree (Nine Network - 1971-1976)
Split Personality (Network Ten - 1967)
Split Second (Nine Network - 1972-1973)
Star Search (Network Ten - 1985-1986, 1991)
Stop The Music (Seven Network - 1950s)
Strike It Lucky (Nine Network - 1994)
Supermarket Sweep (Nine Network - 1992-1994)
Superquiz (Network Ten - 1989)
Surprise Package (Nine Network - 1961)
Take A Chance (Seven Network - 1959)
Take A Letter (Network Ten - 1967)
Take The Hint (Nine Network - 1963-1966)
Talking Telephone Numbers (Seven Network - 1996)
Tell The Truth (Nine Network - 1959-1965, Network Ten - 1971-1972)
Theatre Sports (ABC TV - 1987)
Three On A Match
Tic-Tac-Dough (Nine Network - 1960-1964)
Three On A Match
Time Masters (Seven Network - 1996-1997)
The Tommy Hanlon Show (Nine Network - 1967-1968)
Total Recall (Seven Network - 1994-1995)
Treasure Hunt (Network Ten - 1977-1978)
The Trivial Video Show (Seven Network - 1986)
TV Talent Scout (Seven Network - 1957-1958)
University Challenge (ABC TV - 1987-1989)
Video Village (Nine Network - 1960s)
Vidiot (ABC TV - 1992-1994)
Visquiz (SBS TV - 1985)
The Weakest Link (Seven Network - 2001-2002)
What's It Worth? (ABC TV - 1950s)
Wheel of Fortune (Seven Network - 1981-)
Win Roy and HG's Money (Seven Network - 2000) (see Win Ben Stein's Money)
Wipe Out (Seven Network - 1999-2001)
Who Dares Wins (Seven Network - 1996-2001)
Who, What And Where?
Would You Believe? (ABC TV - 1970-1974)
You're A Star (Network Ten - 1982)

Who Wants To Be A SUPER Millionaire (1999)

Chile

Sabados Gigantes

Mexico

Cien Mexicanos Dijeron
El Rivál Más Débil
La Silla
Jeopardy!
Atínale al Precio
En Familia con Chabelo
Sexos en Guerra

Puerto Rico

A Millon
Control Remoto
Sabado en Grande
Super Sabado

United States

US panel games

All Star Blitz
Says You!

US quiz/game shows

The $64,000 Question and $64,000 Challenge
Almost Anything Goes (1975-1976) (See It's a Knockout)
American Gladiators and spinoff Gladiators 2000
Battlestars 1981-1982 and its revival The New Battlestars 1983
Beat the Clock (1950-1958, 1969-1974, 1979-1980, 2002-2003)
The Better Sex (1977-1978)
The Big Showdown (1974-1975)
Blockbusters (1980-1982, 1987)
Body Language (1984-1986)
Bowling for Dollars (Circa 1970s)

Break the Bank (1948-1957, 1976-1977, 1985-1986)
Bullseye (1980-1982)
Bumper Stumpers (1987-1990)
Card Sharks (1978-1981, 1986-1989, 2001-2002)
Catch Phrase (1985-1986)
Celebrity Sweepstakes
Chain Reaction (1980, 1986-1991)
The Chamber (2002)
Child's Play (1982-1983)
Concentration and Classic Concentration (1958-1973, 1973-1978, 1987-1991)
Cram (2003)
The Cross-Wits (1975-1980, 1986-1987)
Double Dare (1976 version)
Double Dare (1986 version)
Double Talk
Eye Guess (1966-1969)
The Fame Game hosted by Rich Friedland as Red Harris, Las Vegas, NV
Family Feud (1976-1985, 1988-1995, 1999-present)
Fandango (1983-1989)
Fear Factor (2001-present)
Gambit (game show) and Las Vegas Gambit (1972-1976, 1980-1981)
Go (1983-1984)
The Gong Show (1976-1980)
Greed (1999-2000)
High Rollers (1974-1976, 1978-1980, 1987-1988)
History IQ (2000)
Hollywood Connection
Hollywood Squares (1966-1980, 1968, 1971-1981, 1986-1989, 1998-2004)
Hot Potato (1984)
I'd Do Anything
I've Got a Secret
Information, Please!
It's Academic
Jackpot! (1974-1975, 1989-1990)
Jeopardy! (1964-1975, 1984-present)
The Joker's Wild (1972-1975, 1977-1986, 1990-1991)
Let's Make a Deal (1963-1968, 1969-1976, 1971-1977, 1980-1981, 1984-1986, 1990-1991, 2003)
Love Buffet
Lingo (2002-present)
Match Game (1962-1969, 1973-1979, 1979-1982, 1990-1991,

1998-1999)
Match Game-Hollywood Squares Hour (1983-1984)
Match Game PM (1975-1981)
Musical Chairs
Name That Tune (1950s, 1974-1981, 1984-1985)
The Name's The Same
Now You See It (1974-1975, 1989)
Password (1961-1969, 1971-1975) and sequels Password Plus (1979-1982) and Super Password (1984-1989)
The Perfect Match
Play the Percentages
Press Your Luck (1983-1986) and sequel Whammy! The All-New Press Your Luck
The Price is Right (1956-1965, 1972-present)
Pyramid (all versions)
The $10,000 Pyramid (1973-1974, 1974-1976)
The $20,000 Pyramid (1976-1980)
The $25,000 Pyramid (1974-1979, 1982-1987, 1988)
The $50,000 Pyramid (1981)
The $100,000 Pyramid (1985-1988, 1991)
Pyramid (2002-2004)
Queen for a Day
Random Acts of Comedy
Remote Control
Rhyme & Reason
Russian Roulette
Sabado Gigante
$ale of the Century (1969-1973, 1983-1989)
Scrabble (1984-1990, 1993)
Second Chance (1977)
Shop 'Til You Drop
Split Second (1972-1975, 1986-1987)
Street Smarts (2000-2005)
Strike It Rich (1986-1987)
Supermarket Sweep (1965-1967, 1990-1998, 2000-2004)
Tattletales (1974-1978, 1982-1984)
Three's A Crowd (1979)
Tic-Tac-Dough (1950s, 1978-1986, 1990)
To Tell the Truth (1956-1968, 1969-1978, 1980-1981, 1990-1991, 2000-2002)
Top Card, (1989-1993)
Trivia Trap (1984-1985)
Trump Card (1990-1991)
Truth or Consequences

Twenty One (1956-1958, 2000-2001)
Two For The Money
Wait Wait... Don't Tell Me! (radio)
What's Going On?
What's My Line?
The Weakest Link (see UK version below) (2001-2002, 2002-2003)
Wheel of Fortune (1975-present)
Who Wants to Be a Millionaire? (1999-2002, 2002-present) and Who Wants to Be a Super Millionaire? (2004)
Win Ben Stein's Money (1996-2003)
Win, Lose or Draw (1987-1990)
Wordplay
You Bet Your Life
Your Number's Up

US reality shows

The Amazing Race
The Apprentice
The Benefactor
Big Brother
Boot Camp
Chains of Love
Code Room
Combat Missions
Fear Factor
Gana la Verde (Spanish language)
The Joe Schmo Show (parody)
Last Comic Standing
Lost
Love Cruise
Married by America
The Mole
Murder in Small Town X
Real World
Survivor
Temptation Island
Trading Spaces
The Ultimate Fighter
While You Were Out

US dating shows

Average Joe

The Bachelor
The Bachelorette
Blind Date
Boy Meets Boy
The Dating Game and The New Dating Game
Elimidate
The Fifth Wheel
For Love or Money
He Said, She Said
Joe Millionaire
Love Connection
My Big Fat Obnoxious Fiance
The Newlywed Game
Paradise Hotel
Studs
Temptation Island
Who Wants to Marry a Multi-Millionaire
Who Wants to Marry My Dad?

United Kingdom

UK panel games

In these, celebrities compete, usually in two teams.

Bognor or Bust
The Brain Drain
Call My Bluff
Cluedo
Gagtag
Have I Got News for You
If I Ruled the World
I'm Sorry I Haven't a Clue
It's Only TV... But I Like It
Just a Minute (a regular BBC Radio 4 panel game, it appeared on TV briefly)
Mock the Week
Never Mind the Buzzcocks
The News Quiz (Radio 4's predecessor to Have I Got News For You)
Pop Quiz
QI
A Question of Sport
Quote Unquote
Shooting Stars
They Think It's All Over

Through the Keyhole
Twenty Questions
What's My Line?
Whodunnit?
Whose Line Is It Anyway?
Win, Lose or Draw

UK quiz shows

Ask the Family
Blockbusters
Brain of Britain
Cash Cab
Fifteen To One
Going for Gold
Mastermind
Round Britain Quiz
Screen Test
The People Versus
The Vault
Top of the Form
University Challenge
Who Wants to Be a Millionaire?
The Weakest Link

UK reality game shows

Back To Reality
Big Brother
Celebrity Love Island
Fear Factor
Hell's Kitchen
I'm a Celebrity, Get Me Out of Here!
I'm Famous and Frightened!
Survivor
The Games

UK dating game shows

Blind Date
Elimidate
Streetmate

UK activity-oriented shows

The Crystal Maze
Friends Like These
Fort Boyard
Gladiators
History Hunt
Interceptor
The Krypton Factor
Pets Win Prizes
Scrapheap Challenge
Treasure Hunt

UK puzzle-oriented shows

BrainTeaser
Catchphrase
Catchword
Chain Letters
Countdown
Wheel of Fortune

UK other shows

3-2-1
The $64,000 Question
Beat the Teacher
Big Break
Bullseye
Celebrity Squares (see Hollywood Squares)
Cheggers Plays Pop
Crosswits
Deal Or No Deal
Dog Eat Dog
Distraction
Defectors
Every Second Counts
Family Fortunes (see Family Feud)
The Generation Game
The Golden Shot
Name That Tune
Odd One Out
Play Your Cards Right (see Card Sharks)
The Price is Right
Robot Wars
Runaround
Take Your Pick
Time Commanders
Win Beadle's Money (see Win Ben Stein's Money)
Wipeout
You Bet!

Canada

Acting Crazy
Bumper Stumpers
Definition
Front Page Challenge
Guess What
Headline Hunters
It's Your Move
The Mad Dash
Party Game
Pitfall
Reach for the Top

Smart Ask
Talkabout (game show)
Test Pattern
This is the Law
TimeChase
Uh Oh!
Video & Arcade Top 10
Who Wants To Be A Millionaire: Canadian Edition

Canadian Reality Shows

Thrill of a Lifetime

France

Cresus
Des Chiffres et des Lettres
Fort Boyard
Les Jeux de Vingt Heures
Le Maillon Faible (French version of The Weakest Link)

`Qui Veut Gagner Des Millions?`

Finland

Maailman ympäri
SF-Studio
Retsi ja Jykke (followed by spin-off shows by the same team, until the death of Jyrki Otila (Jykke))
Haluatko miljonääriksi? (Finnish version of Who Wants to Be a Millionaire?)
Heikoin Lenkki (Finnish version of The Weakest Link)
Giljotiini
Greed
Mitä Maksaa (Finnish version of The Price is Right)
Onnenpyora (Finnish version of Wheel of Fortune)
Suuri kupla (children's quiz show)
Napakymppi (Finnish version of The Dating Game)
Uutisvuoto (Finnish version of Have I Got News for You)

Ireland

Winning Streak

The Lyrics Board
Quicksilver
Don't Feed the Gondolas
Fame & Fortune
You're A Star
Who Wants to be a Millionaire?
The Weakest Link
Delegation (TV)
Gridlock
Blackboard Jungle
Dodge the Question
It's Not The Answer
Talkabout
Challenging Times
Telly Bingo
Treasure Island
Cabin Fever
The Farm

Russia

Russian reality shows

12 Negrityat
Bol'shoj Brat (Russian version of Big Brother)
Dom
Fabrika Zvyozd (or "Star Factory")
Golod
Kandidat
Narodnyj Artist
Posledniy Geroy (Russian version of Survivor)
Sem' Pod Solncem
Serdce Afriki (Another version of Survivor)
Vozmozhnosti Plasticheskoj Khirurgii

Russian quiz, game & dating shows

Alfavit
Allo, TV!
Faktor Strakha
Koleso Istorii
Kto Khochet Stat' Millionerom? (Russian version of Who Wants to Be a Millionaire?)

Lyubov' s Pervogo Vzglyada (Russian version of The Dating Game)
Lzhec
Narod Protiv
O, Schaslivchik! (First russian version of Who Wants to Be a Millionaire?)
Papa, Mama, Ya
Pole Chudes (Russian version of Wheel of Fortune)
Piramida (Russian version of Pyramid)
Russkaya Ruletka (Russian version of Russian Roulette)
Samyj Umnyj
Shestoye Chuvstvo
Slaboye Zveno (Russian version of The Weakest Link)
Stavka
Sto k Odnomu
Svoya Igra (Russian version of Jeopardy!)
Ugaday Melodiyu (Russian version of Name That Tune)
V Temnote
Vremya - Den'gi!
Za Sem'yu Pechatyami

South Africa

Walk the Plank

Thailand

Fan Pan Tae (Chanel5 - 2000-Present)
Tod Sa Gun Game (Chanel9 - 2003-Present)
by Workpoint Entertainment Company Limted

Pop culture

In the 1984 movie Ghostbusters, at one point Dana (Sigourney Weaver) remarks to Peter (Bill Murray), the whimsical leader of the Ghostbusters team, "You don't act like a scientist. You're more like a game show host!"

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Games of Dare

Games of dare involve daring one or more people to engage in an activity that could result in damage to one or more of the participants. Amongst the games of dare are:

- Chicken (game)
- Gladiatorial

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Games of Logic

The **games of logic** are a supergroup of mathematical games, mind sport and some strategy games that are played against a pseudo artificial intelligence.

- mathematical games

Home | Up | Mathematical Games | Mental-skill Games

Mathematical Games

Mathematical games include many topics which are a part of **recreational mathematics**, but can also cover topics such as the mathematics of games, and playing games with mathematics. As far as two-player games are considered, what distinguishes a mathematical game from ordinary games is the emphasis on mathematical *analysis* of the game, rather than actually *playing* it.

Mathematical Games was the title of a long-running column on the subject by Martin Gardner in Scientific American. He inspired several new generations of mathematicians and scientists through his interest in mathematical recreations. Mathematical Games was succeeded by Metamagical Themas, a similarly distinguished but shorter-running column by Douglas Hofstadter, and afterwards by Mathematical Recreations, a column by Ian Stewart.

Mathematics of games

This can be a more serious subject than the name belies. It can include the statistical analysis of Card games to understand and improve play techniques.

- Game theory has wide social and military applications for tactical and strategic planning.

- Determinacy is the study of when one player or the other has a guaranteed winning strategy for an infinitely long game, and has important consequences in set theory and descriptive set theory.
- Conway's combinatorial game theory and surreal numbers

Playing games with mathematics

The foremost popularizers of recreational mathematics in recent years have been

John Horton Conway
Martin Gardner
Douglas Hofstadter
Ian Stewart

Other figures in recreational mathematics history have included:

Henry Dudeney
Piet Hein
Sam Loyd

Specific mathematical games and puzzles

Angels and Devils
Chomp
Domineering
Dots and boxes
Eight queens puzzle
Fifteen Puzzle
Four fours
Hackenbush
Hex
Hexaflexagons
Knight's Tour
L game
Life
Monty Hall problem
Nim
No-three-in-line problem
Penrose dominoes
Pentominoes
Philosopher's football
Prisoner's dilemma

Rhythmomachy
Rubik's Cube
Sim
Soma cube
Sprouts
Squaring the square
Sudoku
Tangram
Think-a-Dot
Three cottage problem
Tower of Hanoi
Verbal arithmetic
Wire-and-string puzzles (knot theory, topology)

Some sort of mathematics can be found in nearly all types of games.

Other games and pastimes of non-trivial mathematical interest:

- Juggling (juggling patterns)
- Origami (many mathematical results, some deep)

See also:

- Games of skill

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Games of Physical Activity

Some of these games train the body mostly through repeated action to enhance basic coordination skills that are useful and needed. Others are used purely for challenge and enjoyment and any increase in skill is accidental. This category of game is closely related to games of physical skill.

- Sports
- Ball games

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Global Positioning System-based Games

A **Global Positioning System-based game** is a game played in conjunction with a Global Positioning System device (GPS). The GPS is used to verify or coordinate coordinates on the globe.

- Geocaching
- Pac-Manhattan

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Group-dynamic Games

Group-dynamic games are experiential exercises which teach about and utilise principles about how groups function from a social psychological point of view, such as with regard to interpersonal relationships.

Group dynamics can be understood from as complex from an interpersonal relationships point of view because there are:

- relationships between two people
- relationships between a person and a group
- relationships between groups

Group-dynamic games are usually designed for the specific purpose of furthering personal development and character building via a Group-dynamic milieu.

The use of such activities has a proven history of application in conflict resolution, anger management and team building and many more areas such as drug rehabilitation and drama therapy.

Types of group-dynamic games

- Dancing (some types)
- Dramaturgy (sociology)
- Group problem solving activities (or initiative tasks)
- Ice-breaker games
- Large group games
- Leadership-games
- Psycho-drama
- Role-playing games
- Team building games
- Trust-building games
- Win-win games (= 'cooperative games', 'new games')

Tips for running group-dynamic games

- Get a book or go a website on this subject written by a professional.
- Make sure you have basic knowledge on leadership, teamwork, group dynamics and psychology. Some specific knowledge of specialist areas such as neuro-linguistic programming and transactional analysis is useful, but not necessary.
- The more intense work you want to do, the more background knowledge and experience you as (one of) the group facilitator(s) should have
- Know your limits
- Create a comfortable physical space and a relaxed atmosphere
- Participants should wear comfortable clothing
- Ensure a minimum of disturbances during sessions (no visitors during sessions etc)
- Treat the event holistically: care for body, mind and spirit
- Be aware that we learn best (experience things most intensely) when seeing, hearing and touching is involved at the same time (audio, visual, kinesthetic aspects)
- Start with ice-breaker games
- Then introduce trust-building games
- Then tackle group problem solving activities (or initiative tasks)
- Use an experiential learning model (e.g., do-review-plan), which includes debriefing and feedback
- Use time-outs to clarify problems
- Enjoy and have fun, but understand the serious sides of the exercises as well

There are many books and websites which help explain how to set up groups (fun groups or self-help groups) and which tell you which games are safe to play without a professional (psychologist, etc) being at hand.

Home | Up | Dramaturgy | Ice-breaker Games | Psychodrama | Role Playing Games | Win-win Games | Organizational-dynamic Games

Dramaturgy

Dramaturgy is a sociological perspective stemming from the work of Erving Goffman. In dramaturgical sociology it is argued that human actions are dependent upon time, place, and audience.

People play social roles (such as the impersonator, the con artist, the shoplifter). These roles are dependent upon the situation (the stage and props available). Social interaction becomes drama (courtrooms, public hearings).

A useful way of understanding dramaturgy is to think of a waiter or waitress at a restaurant. Their main avenue of concern for him or her is "customer service". Even if a customer is rude, waiters and/or waitresses are expected to be polite - "the customer is always right" - as part of their job responsibilties. That same waiter or waitress speaks differently when going out to their break room. They may complain, mimic and discuss with their fellow peers how irritating and rude the customer is. In this example, the waiter/waitress acts a certain way when dealing with customers and acts a completely different way when with their fellow employees. Goffman referred to this as front stage/ back stage personalities.

Another example of dramaturgy is the case of Dennis Rader - the BTK Strangler. Dennis Rader appeared to be a religious family man,a "front stage" performance perhaps. But when not operating under that cover, he was a sadistic sexual killer who horrifically murdered 10 victims - i.e. his "back stage" persona.

Central concepts: stigma, stigmatized signs, "identity work", deviance disavowed, symptomatic actions, total institution, moral career

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Ice-breaker Games

An **icebreaker** is a facilitation exercise intended to help a group to begin the process of forming themselves into a team. Icebreakers are commonly presented as a game to "warm up" the group by helping the members to get to know each other. They often focus on sharing personal information such as name, hobbies, etc.

Examples of these kinds of facilitation exercises include:

- *The Little Known Fact* - Participants are asked to share their name, department or role in the organization, length of service, and one "little known fact" about themselves. This "little known fact" becomes a humanizing element for future interactions.
- *Two Truths and a Lie* - Participants introduce themselves and make three statements about themselves - two true and one untrue. The rest of the group votes to try to identify the falsehood.
- *Interviews* - Participants are paired up and spend 5 minutes

interviewing each other. The group reconvenes and the interviewer introduces the interviewee to the group.

More advanced icebreaker activities will also prepare the group for its assigned activities. For example, if the team's objective is to redesign a business process such as Accounts Payable, the icebreaker activity might take the team through a process analysis including the identification of failure points, challenging assumptions and development of new solutions - all in a simpler and "safer" setting where the team can practice the team dynamics which they will use to solve the assigned problem.

Examples of these kinds of facilitation exercises include:

- *The Ball Exercise* - Immediately after introductions, the facilitator arranges the group in a circle and asks each person to throw the ball to a person on the other side of the circle while stating their name. When every person in the group has thrown the ball at least once, the facilitator announces that "we are going to do it again but this time we'll time it" and announces the rules. 1) Each person must touch the ball in the same order as the first round. 2) Each person must touch the ball with at least one hand. 3) Time stops when the ball is returned to the facilitator. (For further complication, the facilitator will sometimes introduce three balls in succession to the process.) Regardless of their performance, the facilitator expresses disappointment with the group's performance and urges them to do it again faster. When asked for clarification, the facilitator only reiterates the rules. An effective team will creatively redesign their process to meet the requirements of the rules. After several iterations, the facilitator will call a halt and use the exercise to draw out morals which will be relevant later in the day such as "Challenge assumptions", "Don't be satisfied with the first answer", "Be creative", etc.
- *The Human Spiderweb* - The facilitator begins with a ball of yarn. He/she keeps one end and passes the ball to a participant. Each participant introduces him/herself and role in the organization then, keeping hold of the strand of yarn, unrolls enough to hand the ball to another person in the group and how they are dependent on that person (or role). The process continues, often with multiple dependencies until everyone is introduced. The facilitator then pulls on the starting thread and asks the group if anyone's hand failed to move. The facilitator then uses the yarn as a metaphor for the interdependencies of the group or the process which they will be discussing.
- *The Dvorak Challenge* - The facilitator hands out a printout or

picture of a Dvorak keyboard and compares it to the traditional Qwerty keyboard. The facilitator describes the productivity gains which are said to be possible if we all used Dvorak and "sells" the concept. Then the facilitator asks the group to identify all the reasons why businesses have not already converted to the Dvorak layout. The facilitator uses this as a metaphor for the natural resistance to change which the team will face if their proposed initiative is implemented.

Icebreaker activities are often perceived as a waste of time in corporate settings. They are criticized as being conducted for the benefit of the facilitator (learning names) rather than for the benefit of the participants (relevance to the team's assigned task).

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Psychodrama

Psychodrama is a method of psychotherapy which explores, through action, the problems of people. It is a group working method, in which each person becomes a therapeutic agent for others in the psychodrama group. Developed by Jacob L. Moreno, psychodrama has strong elements of theater, often conducted on a stage with props.

Psychological Uses

In psychodrama, participants explore internal conflicts through acting out their emotions and interpersonal interactions on stage. The acting becomes a replacement for the typical 'couch' that psychotherapists use to talk to their patients. A given psychodrama session (typically 90 minutes to 2 hours) focuses principally on a single participant, known as a protagonist. Protagonists examine their relationships by interacting with the other actors and the leader, known as the director. This is done using specific techniques, including doubling, role reversals, mirrors, soliloquy, and sociometry.

Psychodrama attempts to create an internal restructuring of dysfunctional mindsets with other people, and it challenges the participants to discover new answers to some situations and become more spontaneous and independent. There are over 10,000 practitioners internationally.

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Role Playing Games

A **role-playing game** (**RPG**) is a type of game in which players assume the roles of characters and collaboratively create narratives. Gameplay progresses according to a predetermined system of rules and guidelines, within which players may improvise freely. Player choices shape the direction and outcome of role-playing games.

Role-playing games are typically more collaborative and social than competitive. A typical role-playing game unites its participants into a single team that adventures as a group. A role-playing game rarely has winners or losers. This makes role-playing games fundamentally different from board games, card games, sports and most other types of games. Like novels or films, role-playing games appeal because they engage the imagination.

Because the terms "role-playing game" and "RPG" have both to some degree been co-opted by the computer gaming industry, traditional non-digital pastimes of this sort are increasingly being referred to as **pen and paper role-playing games** (**PnP RPG** or **PPRPG**) or tabletop role-playing games (**TTRPG**).

Concept

At their core, role-playing games are a form of interactive and collaborative storytelling. Simple forms of role-playing exist in traditional children's games such as "cops and robbers," "dogs and mailmen," "cowboys and indians," and "playing house." Mature role-playing games are more sophisticated. Unlike the childhood game of "cowboys and indians" for example, participants in a Wild West role-playing game will generate specific, detailed characters and an involved plot. Their goal is to reproduce the themes and enjoyment of a Western film or a Western novel. Like the serial Westerns of old movie matinees, such episodic games are often played in regular sessions that continue for months or even years.

Varieties

The original form of role-playing game was the fantasy wargame, inspired by sword and sorcery fiction and utilizing miniature figurines and scaled terrain grids to illustrate action in a way similar to that of tactical wargames. Whether or not these supplementary materials are still used, this variety of table-top interaction remains a dominant model for role-playing. Participants usually sit around a table and conduct the game as a small social gathering. Tabletop games that emphasize plot and character interaction over game mechanics and combat sometimes prefer the name storytelling game.

A LARP, short for live action role-playing, is played more like improvisational theatre. Participants act out their characters' actions, often in costume. LARPs de-emphasize die rolls and rulebook references. Freeform role-playing games are a subgenre of LARP with minimal rules and a greater focus on character development.

Computer role-playing games are a genre within the console game and computer game markets. They develop character and plot more than other computer games, and implement game mechanics derived from tabletop RPGs. CRPGs can be single player or multiplayer, often utilizing networks to allow players to participate with separate computers or consoles, either at remote locations or on a local area network (see LAN party).

Internet role-playing games range from graphical games such as *EverQuest* to grass roots text based games. For a fuller discussion see Internet games or the articles MMORPG, MUD, MUSH, PBEM, play-by-post gaming, and online text based role playing game.

Computer-assisted role-playing games blend elements of tabletop gaming with computer gaming. Computers are used for recordkeeping and sometimes to resolve combat, while the participants generally make decisions concerning character interaction.

Some players consider Collectible card games to be a kind of role-playing game. This categorization is a matter of dispute within the gaming community.

Game mechanics

Despite their generally collaborative nature, role-playing games have rules known usually as game mechanics. Almost all role-playing games require the participation of a gamemaster (GM), who narrates the game session and acts as the moderator and rules arbitrator. The rest of the participants create and play inhabitants of the game setting, known as player characters (PCs). The player characters collectively are known as a "party".

During a typical game session, the gamemaster will outline a story goal for the players to achieve through the actions of their characters. Frequently, this involves interacting with non-player characters, other denizens of the game world, which are played by the gamemaster. Many game sessions contain moments of puzzle solving, negotiation, chases, and combat.

To determine the success or failure of a character's actions, many game systems use weighted statistics and dice rolls. In most systems, the gamemaster uses the rules to determine a target number. The player rolls dice, trying to get a result either more than or less than the target number, depending on the game system.

Character creation

Characters have unequal distributions of basic talents and skills. These shape the character's choices and capabilities within the game. Game rules are usually balanced so that no individual character can excel in every area.

Before play begins, players develop a concept of the role they would like to play in the game. They then use the game system's character creation rules to form a representation of their characters, in terms of game mechanics. The character's statistics are recorded on a special-purpose form called a character sheet. Some systems, like the d20 System, use character classes to define character concepts, while others, such as GURPS, allow the player to create unique character concepts by freely assigning statistics.

Many game systems make distinctions between two key types of statistic: attributes and skills. Attributes are statistics all characters possess: strength, agility, and intelligence are common examples. These are ranked, often on a numeric scale, so that a player can gauge the character's capabilities. For example, a character's strength rating could be used to determine the likelihood that the character can lift a certain weight.

Skills are abilities that only some characters possess, such as negotiation, horseback riding, and marksmanship. Game systems often define skills that are genre-appropriate. For example, Asian adventures commonly emphasize martial arts. Fantasy settings include simulated magic. Science-fiction settings may contain psionics. However, some skills are found in several genres: a medieval rogue and a Wild West outlaw may both be very proficient at throwing knives.

Game mechanics are not a substitute for a character concept. For example, one Wild West gunfighter may become a quick drawing revolver marksman, whereas another with similar game statistics is a mounted rifle expert.

Genres

Role-playing games can also be divided into genres by the fictional setting where they take place.

Fantasy

Fantasy role-playing games draw their inspiration almost exclusively from fantasy literature, such as the works of J. R. R. Tolkien. The setting in these games is usually a world with a level of technology similar to that in Europe sometime between years 800-1400. Fantasy elements include magic and supernatural creatures, such as dragons. The genre can be subdivided into high fantasy where supernatural events are commonplace, and low fantasy where there are little or no supernatural aspects. Because the world's most popular role-playing game is part of this genre, it is the most played role-playing genre. RPGs are sometimes collectivelly called "Fantasy role-playing games" ("FRP").

- **Prominent titles**: Dungeons & Dragons, Exalted, Palladium Fantasy Role-Playing Game, RuneQuest, Legend of the Five Rings

Science Fiction

SF role-playing or **sci-fi role-playing** games are inspired by science fiction literature. The setting is generally in the future, sometimes near future but also quite often in the far future, though in many cases the setting bears no connection to the world we live in, e.g. Star Wars. Common elements involve futuristic technology, contact with alien life forms, experimental societies, and space travel. Psionic abilities (i.e. ESP and telekinesis) often take the place of magic. The genre can be divided similarly with science fiction literature into sub-genres, such as cyberpunk or space opera. SF is the second most played genre after fantasy.

- **Prominent titles**: Rifts, Traveller, Cyberpunk 2020, Paranoia, Shadowrun

Licensed

Licensed games are tie-ins to larger media franchises. They were once rare but the number of these games is increasing. Licensed games are usually considered part of their franchise's genre rather than a genre in and of themselves. Many licensed products are now defunct because of license expiration.

- **Prominent titles**: Star Wars RPGs, Buffy the Vampire Slayer, Star Trek, Middle-earth Role Playing, Warcraft the Roleplaying Game

Historical

Historical games take place in the past. Settings that have been explored in role-playing games include Feudal Japan, Imperial China, Maya civilization, Arthurian Britain, Ancient Rome, Ancient Egypt, Sumeria, Babylon, Alexandria, Victorian era, the World Wars and the Vietnam War. Because historical games often include magic as part of their milieu, the line between "history" and "high fantasy" can be somewhat blurred; the usual distinction is that a game set in a time period (mythic or real) of past Earth is a historical game, while a game set in an "alternate Earth" is a fantasy game.

- **Prominent titles**: Pendragon (Arthurian), Sengoku (Warring States Japanese), Recon (Vietnam War), Fantasy Imperium (Historical Europe)

Horror

Horror games take their inspiration from horror literature. Horror Roleplaying can be divided into two major groups. The first is inspired by the works of H. P. Lovecraft, focusing on humanity's fight against malevolent, extra-dimensional entities. The second focuses on playing supernatural creatures, mostly preying on humanity, such as the books of Anne Rice. The setting in these games is often contemporary or from the 19th or 20th century. Creating the correct mood and suspense is important in these games.

- **Prominent titles**: Call of Cthulhu, Kult, World of Darkness

Comic Book superhero

Superhero role-playing games are inspired by superhero comic books and graphic novels. The setting is generally the present, sometimes near future or past, though in many cases the setting is significantly different from the real world. Rubber science, viable mutants, and space aliens are all common in the genre. The RPG games themselves usually have the players as super heroes, saving the common people from crime and supervillains. The genre can be divided into sub-genres that mirror comic book genres and time periods: for example, Golden Age where the heroes are always virtuous and morality is black and white, and Silver Age where the distinctions are less clear.

- **Prominent Titles**: Champions, DC Heroes, Marvel Super Heroes, Mutants and Masterminds

Humor

Humor games are based on creating situations which are funny. Humor is not usually a genre in itself (although it can be), but a modifier added to other genres.

- **Prominent titles**: Toon, Paranoia

Universal

Universal games are based on creating a generic system that can be adapted to any genre. In practice, universal games are typically biased toward a specific style or genre and adaptable to others.

- **Prominent titles**: d20, GURPS, Hero System, Savage Worlds, Tri-Stat dX

Multi-genre

Several games combine different genres. Ars Magica can be considered a fantasy role-playing game in a historical setting, Shadowrun combines cyberpunk with fantasy elements whereas steam punk games combine elements of science fiction with history. DragonMech combines elements of steampunk and fantasy into a single genre of its own. There also exist games unique enough that they do not fit comfortably into easily-defined genres, but these are rare.

Meta-genre

The are certain rare RPGs that are actually classified under the Meta-genre. These games are quite simply "RPGs about RPGs." The most famous example is probably the Dot.Hack series on the Playstation 2.

Famous writers

Dave Arneson
Keith Baker - creator of the D&D Eberron campaign setting
M. A. R. Barker - Tekumel
Terry Brooks
Phil Brucato - Mage: The Sorcerers Crusade, Deliria: Faerie Tales for the New Millenium
Frank Chadwick
Monte Cook
Bruce Cordell - Return to the Tomb of Horrors, Expanded Psionics Handbook
Greg Costikyan - Toon, Paranoia, Star Wars RPG
David Eddings
Joe Dever - Lone Wolf, Greystar, Freeway Warrior
Raymond E. Feist
Andrew Greenberg
Ed Greenwood - Forgotten Realms material
Jeff Grubb - Forgotten Realms material
Gary Gygax - Early TSR material, often called "The Father of D&D"
Mark Rein Hagen - Vampire: The Masquerade and World of Darkness
Tracy Hickman - TSR's Dragonlance
Steve Jackson (US) - Steve Jackson Games
Steve Jackson (UK) - Games Workshop
Robin Laws
Mercedes Lackey
Mark C. MacKinnon - Big Eyes, Small Mouth
Roger E. Moore - Dragon Magazine Editor as well as writer
Marc W. Miller - Various incarnations of Traveller
Melanie Rawn
R.A. Salvatore - TSR's Forgotten Realms (Menzoberranzan)
Stephan Michael Sechi - Creator of the Talislanta game released originally in 1987.
Mike Selinker
Michael A. Stackpole - Also known as the "RPG Advocate"
Greg Stafford - Glorantha
Timothy Truman - TSR Hobbies Staff Illustrator (early 1980's)
Jonathan Tweet
Michael J. Varhola - Founder of Skirmisher Publishing LLC [1]
Margaret Weis - TSR's Dragonlance and MWP's Serenity
Skip Williams
Bryan Sycamore - Designer of the Arborlaria d20 Setting
Loren Wiseman
John Wick- Game Designer of Legend of the Five Rings, 7th Sea, and Orkworld.
Ken St. Andre - Author of Tunnels and Trolls

Famous artists

Brom - many TSR products predominantly Dark Sun
Clyde Caldwell
Jeff Dee - many early TSR products including Deities and Demigods
Tony Diterlizzi - many early TSR products including 2nd Edition Monster Manual and Planescape series, DiTerlizzi's home page
Jeff Easley - many early TSR products including the Dragonlance series, and the cover to the second edition of the Player's Handbook.
Larry Elmore - many early TSR products including the Dragonlance series
Phil Foglio - GURPS IOU, S.P.A.N.C., the Xxxenophile card game
Phil "Shade" Kightlinger - A wide variety of fantasy and science fiction art, including large cover and interior pieces for Skirmisher Publishing
Lissanne Lake - Many fantasy gaming products, including Skirmisher Publishing and Dragon Magazine
Erol Otus - many early TSR products including "S3: Expedition to Barrier Peaks"
Keith Parkinson
David C. Sutherland III - Early TSR Products and Book Covers "A Paladin in Hell"
Miles Teves - Jorune, later became a renowned Hollywood conceptual artist
Timothy Truman - TSR Hobbies Staff Illustrator (early 1980's)
Michael Whelan - many TSR products including 2nd Edition PHB and DMG
John Zeleznik - GURPS books and is main cover artist for Palladium books.
Liz Danforth - Tunnels and Trolls artist

Celebrity players

Sean Astin
Fairuza Balk
Bruce Campbell
Dave Chappelle
Stephen Colbert
Billy Crystal
Rivers Cuomo
Vin Diesel [2]
John Dolmayan [3]
Conchata Ferrell
Johnny Knoxville

Matthew Lillard
Jennifer Lopez
Ewan MacGregor
Eric Raymond
Jason Statham
Jacques Villeneuve [4]
Brian Warner
Wil Wheaton
Robin Williams
Matthew Krenik
Chaz Chamberlain
Antonio Rivera

Events

GenCon
Ropecon
Origins
Dragon Con

Types of games

- Simulation
- Simulation game
- Nation-simulation game
- Grand strategy
- Wargaming
- Miniature wargaming
- Tabletop game
- Tabletop role-playing game
- Computer and video games
- Computer role-playing game
- Computer-assisted gaming
- Play-by-mail game
- Online text based role playing game
- Massively multiplayer online game
- Live action role-playing game
- Freeform role-playing game
- Storytelling game
- Interactive Storytelling Game
- Board game.

Wargaming

Wargaming is the play of simulated military operations in the form of games known as **war games**. It can be one of a number of ways of exploring the effects of warfare or testing strategies without actual combat. It can take the form of a hobby in which one or more players simulate battles or entire wars (as a type of simulation game), or a model or computer simulation of possible scenarios in military planning, (this is also called warfare simulation, see also defense contractors); or the full-scale rehearsal of military maneuvers as practice for warfare. In this case, the two sides in the simulated battle are typically called "blue" and "red", to avoid naming a particular adversary.

History of wargaming

Modern wargaming grew out of the military need to study warfare and to 'reenact' old battles for learning purposes. The stunning Prussian victory over the French in the Franco-Prussian War (1870-71) is sometimes partly credited to the training of Prussian officers with the Kriegspiel. The first specific non-military wargame club was started in Oxford, England in the 19th century.

H.G. Wells' book Little Wars was an attempt to codify rules for fighting battles with toy soldiers (miniatures), and make them available to the general public. The first modern mass-market wargame, based on cardboard chits (counters) and hex-board maps, was invented by Charles S. Roberts in 1952 called Tactics; he went on to found the Avalon Hill game company, and is called "The father of board wargaming". The modern commercial board wargaming industry is considered to have begun with the publication of Tactics II in 1958, and the founding of The General Magazine by the Avalon Hill Game Company in the early 1960s.

Wargames have existed for centuries — chess is an ancient example. In fact, one could make a case that all competitive zero-sum games may be considered wargames. Wargames, like all games, exist in a range of complexities: some are fundamentally simple (so-called "beer-and-pretzel" games), while others (generally in an attempt to increase the 'realism' of the situation) produce rule sets that may encompass a large variety of actions (so-called "monster" games).

Wargames vary in the level of complexity of rules and record keeping they require. Detailed wargame rulesets (some of which require hundreds of pages of small print and intensive recordkeeping) generally result in a slow (and for many, less enjoyable) game. Simpler "beer and pretzels" rulesets, on the other hand, produce "fun" games and encourage tournament or competitive play, but may not accurately depict events that historically took place in a conflict.

Tabletop wargaming (miniature wargaming)

Main articles: Miniature wargaming

Miniature wargaming typically involves the use of miniature plastic or metal models for the units and model scenery placed on a tabletop or floor as a playing surface. Games with miniatures are sometimes called tabletop games, tabletop wargames, miniature wargames, or simply wargames.

Board wargaming

A typical non-computerized **wargame** (**Kriegspiel**) consists of the following components:

- *Map*: The map (or maps) shows the terrain over which the battle/war is fought, usually overlaid by hexagons to regulate movement. Other variations include the "point to point" map where areas are connected by lines to show possible movements, and the area map (similar to Risk or Axis and Allies).
- *Counters*: These are usually small cardboard squares moved around on the map that represent armies, military units or individual military personnel, as well as markers to show the current status that these units might be in. Alternatively, wooden blocks are sometimes used instead. By standing them on one side they can limit the enemy knowledge of friendly units and can be rotated to a different side to show changes in relative strength.
- Dice: These are generally used to add the element of chance. Given that many military actions have been influenced or even decided by odd events, straight-forward strategy games such as

chess and go may be considered too abstract to represent real war.
- *Rules*: Rules vary in complexity and depth from 1 page for some games to 190 pages for others.

A non-computerized wargame may include some or all of the following components:

- *Markers*: These are used to give information to the players on the condition of the game at various points in time or space. Usually, markers are used on the map or in combination with various tracks (events, time, points of some sort). These tracks may be included on the map or provided on separate sheets.
- *Cards*: More games are designed to be card-driven. This means that the cards have events outside the area of the map or random die-rolls which can be used to benefit one player or disadvantage another. These cards are sometimes also used to generate random number draws instead of or in combination with die rolls.
- *Playbook*: More and more games use playbooks where the designer has the scenarios listed separately as well as design and historical notes.

Computerized wargaming

Computer wargames display the units and scenery on the monitor screen.

Computerized wargames have several distinct advantages over "paper and pencil" wargames:

- no need to roll dice over and over again (The computer does the simulation)
- no recordkeeping (the computer handles all the 'paperwork')
- ability to start, stop and save the game at any time (if there is no need to coordinate with a human opponent; note that this is also possible with board games, as long as no children or animals have access to the game area)
- ability to view only a part of the battlefield in detail at a time, adding realism
- no need to paint miniatures
- easy to find opponents on the Internet

Disadvantages of computerized wargames:

- computer may not be as competent as a human opponent (this problem can generally be avoided if there is a multiplayer mode)
- lack of human interaction (of course, the computer won't tip over the board if it is losing)
- computer arbitration allows more complex rules, which can be more difficult to understand and analyze; especially since these rules may be "hidden" from the player(s) in the software code
- player(s) can't easily modify the rules or adapt them to similar situations
- loss of the tactile satisfaction in moving finely painted figures about the tabletop

Computer-assisted wargaming attempts to combine the advantages of computerized wargaming with those of paper-and-pencil wargaming. Computers are used for recordkeeping and sometimes for the resolution of combat, but a human referee makes any decisions requiring judgement. Computer-assisted wargaming is sometimes abbreviated as "CAG," which stands for "computer-assisted gaming."

Traditional wargaming differs from so-called real-time strategy computer games in that traditional wargames are generally turn-based (an obvious exception being 'in-the-field' wargaming by military organizations). Traditional wargames focus on the ability to analyze in-depth, plan to achieve a goal, and adjust plans to changing circumstances. Real-time strategy games (which might better be called vastly-speeded-up-time strategy games) focus more on reflexes, coordination, and the ability to make snap decisions with limited information. Also, real-time strategy games require less sophisticated artificial intelligence on the part of computer players.

Computer wargames are often played against human opponents via e-mail (by exchanging save-game files) to provide the human interaction and a more interesting opponent than that of the program. This has the disadvantage of taking much longer to finish the game, depending upon how often the players check their e-mail. It is still much quicker (and easier) than the older method of playing board wargames by postal mail. A faster alternative (not available with all games) is playing over a direct connection, either LAN, modem or Internet.

Types of military wargaming

Wargame simulations can usually be categorized according to the type of technology available to the 'armies' involved, the branch(es) of the military, the period of military history, and the unit size or map scale.

Environment

- land battles
- sea battles
- air battles
- combinations of land, sea, and/or air battles
- space battles

Historical period

All periods of history have their wargaming enthusiasts. Historical games are generally by these periods:

Ancient history (Greeks, Romans, etc.)
Middle Ages (no gunpowder)
Early gunpowder
Napoleonic Era
Early modern war (American Civil War)
World War I
World War II
Modern war (Korean War, Vietnam War, etc.)

Wargames can also be used to simulate fictional situations:

Hypothetical (World War III)
Alternate history (fantasy or science-fiction "what if" worlds, such as SteamPunk, Gothic Horror, and fantasy Napoleonic)
Futuristic / Science Fiction war (including space marines, spaceships and directed-energy weapons etc.)
Fantasy war (including Elves, Dwarves, Goblins etc.)

Unit or map scale

- *Grand strategy* — focus is on a war or series of wars, often over a long period of time. Individual units, even armies, may not be represented; instead, attention is given to theaters of operation. All of the resources of the nations involved may be mobilized as part of a long-term struggle. The simulation typically involves political and economic as well as military conflict.

- *Strategic* — military units are typically division, corps, or army-sized, and they are rated based upon raw strength. At this scale, economic production and diplomacy are significant. The simulation typically involves all branches, and often the entire forces of the nations involved, and covers entire wars or long campaigns

- *Operational* — units are typically battalion to divisional size, and are rated based on their average overall strengths and weaknesses. Weather and logistics are significant. The simulation typically focuses on one branch of the military forces, with others somewhat abstracted, and usually covers a single campaign.

- *Tactical wargames* — units range from individual vehicles and squads to platoons or companies, and are rated based on types and ranges of individual weaponry. The simulation almost always focuses on a single branch, occasionally with others abstracted, and usually covers a single battle or part of a large battle.

- *Skirmish* — units represent individual soldiers, with possible tracking of wounds and ammunition. The simulation usually covers a small firefight. Role-playing games can be considered skirmish wargames. Also known as "Man-to-Man" scale, the first such games in the modern era of board wargames include Patrol and Sniper!.

Notable wargamers

H.G. Wells - Known as the "Father of miniature wargaming"
Charles S. Roberts - Known as the "Father of modern board wargaming", founder of Avalon Hill.
Tony Bath - founder of The Society of Ancients
Phil Barker - one of the founders of the UK's Wargames Research Group
Larry Bond - designer of "Harpoon" most respected contempory naval wargame and best selling author
Frank Chadwick - Founder of Game Designers Workshop, prolific wargame designer and inovator
Walter Cronkite - Noted war correspondent and CBS News anchorman
Jim Dunnigan - "Dean" of board wargame designers, most prolific print wargame designer, many firsts in wargame design
Don Featherstone - known in the UK as the father of modern wargaming
Donald Greenwood - Original publisher of Panzerfaust magazine. Took over as editor of the Avalon Hill General. Eventually rising to Vice

President. Currently runs the Boardgame Players Association (BPA).
Charles Grant, author of The Wargame.
Paddy Griffith
George Gush
Gary Gygax - Creator and publisher of Dungeons and Dragons; See also D&D
Joseph Miranda - editor of Strategy & Tactics, prolific wargame designer, inovator in depicting human factors
Curt Schilling - Founded Multi-Man Publishing to keep Advanced Squad Leader alive.
Lionel Tarr
Brigadier Peter Young
Phil Dunn - Founder of the Naval Wargames Society

Notable wargames

- Board-based wargames (uses a board to regulate movement). (*See also:* List of board wargames.)

A House Divided
Advanced Squad Leader
Ancients
Axis and Allies
BattleTech:Succession Wars (popular Boardgame version of BattleTech.)
Blood Bowl
Civilization
Cosmic Encounter
Diplomacy
Empires in Arms
Europa series of games
Fortress America
Great War at Sea series
Kingmaker
Mayday
Magic Realm
Napoleon
Ogre/G.E.V
PanzerBlitz
Samurai Swords, see also Shogun (game)
Second World War at Sea series
Squad Leader
Star Fleet Battles

Tactics II
Terrible Swift Sword
Rise and Decline of the Third Reich
Titan
Victory in the Pacific
Wooden Ships and Iron Men
World in Flames

- Miniature wargaming (terrain is laid out on a table, and movement regulated by rulers and the like)

Ætherverse
BlitzkriegCommander
Contemptible Little Armies
Crossfire
BattleTech
De Bellis Antiquitatis
De Bellis Multitudinis
D&D Miniatures
Empire
Fire and Fury
Flames of War
Flintloque
G.A.S.L.I.G.H.T
Heroclix
I Ain't Been Shot Mum
Mage Knight
MechWarrior: Dark Age (Later 'Age of Destruction')
Principles of War
Starship Marine
Star Wars Miniature Battles by West End Games
Star War Miniatures by Wizards of the Coast
Striker
The Sword and the Flame
Wargames Rules 3000 BC to 1485 AD (Wargames Research Group)
Warhammer 40,000
Warhammer Ancient Battles
Warhammer Fantasy Battle
Warhammer Epic 40,000 a larger "operational" game set in the Warhammer 40K universe.
Warmachine
Warmaster a larger "operational" game set in the Warhammer Fantasy universe.

- Oddities

Ace of Aces (flip-book system)
Car Wars (readily plays as board or miniatures)
Battleground: Fantasy Warfare (card based game that 'simulates' miniature wargaming)

Wargames and wargaming as computer terms

Another common use of the term "Wargame" is among the Hacker community (specifically White-hats), referring to a server that is set up specifically for the purpose of being hacked into. This allows the hacker to have a server to hack into, without the need to worry about the legal issues, as the owner is knowingly allowing this to happen.

See also

- Simulation game
- Role-playing game
- Miniature wargaming
- Nation-simulation game
- Tabletop game
- Computer and video games

Home | Up | Man to Man Wargames | Miniature Wargaming

Man to Man Wargames

Man-to-Man wargames are wargames in which units generally represent single individuals or weapons systems, and are rated not only on weaponry but may also be rated on such facets as morale, perception, skill-at-arms, etc. The games are designed so that a knowledge of military tactics, especially at the small unit (squad) level, will facilitate good gameplay. Man-to-man wargames offer an extreme challenge to the designer, as fewer variables or characteristics inherent in the units being simulated are directly quantifiable. Modern commercial board wargaming stayed away from man-to-man subjects for many years, though once the initial attempts were made to address the subject, it has evolved into a popular topic among wargamers.

Man-to-man wargames have been a popular pastime for PC and console gamers, though "true" man-to-man combat simulators are much more rare than action-adventure oriented first person shooters which can probably be excluded from the topic of man-to-man wargames.

Modeling conflict at this scale provides unique challenges to the game designer, who must find a way to quantify variables such as human behaviour at an individual level; games at higher (grand strategic, strategic, operational or tactical) levels can arguably have their variables more easily quantified.

Many early designs for man-to-man games had cumbersome pre-plotting of moves, others used a system of multiple maps and umpires to try and create "fog of war" or uncertainty for players.

Board Games

Below is a list of man-to-man wargames in the order in which they were introduced.

Sniper!: (SPI, 1973)
Patrol: (SPI, 1973)
City Fight: (SPI, 1979)
Trenchfoot: (Game Designers' Workshop, 1981)
Cry Havoc: (Eurogames, 1981)
Close Assault: (Yaquinto, 1983)
Ambush!: (Victory Games, 1983)
Move Out (Ambush! module) (Victory Games, 1984)
Purple Heart (Ambush! module) (Victory Games, 1985)
Silver Star (Ambush! module) (Victory Games, 1987)
Firepower: (Avalon Hill, 1984)
Sniper! (2nd Edition): (TSR, Inc., 1986)
Battle Cry: (3W, 1986)
Battle Hymn: (Victory Games, 1986)
Leatherneck: (Battle Hymn module)(Victory Games, 1988)
Platoon: (Avalon Hill, 1986)
Soldiers: (West End, 1987)
Hetzer: (TSR, Inc., 1988)
Special Forces: (TSR, Inc., 1988)
Iron Cross (Strategy & Tactics Magazine, 1990)
Shell Shock (Victory Games, 1990)
Lock 'N Load: Forgotten Heroes Vietnam (Shrapnel, 2003)
Lock 'N Load: ANZAC Attack (Shrapnel, 2004) (expansion for Lock 'N Load: Forgotten Heroes Vietnam)
Lock 'N Load: Band of Heroes (Shrapnel, 2005)(expansion for Lock 'N Load: Forgotten Heroes Vietnam)

Some of these games represent further development of earlier titles; for example *Firepower* was a modern version of *Close Assault* which had been set in World War Two, designed by the same developer. The second edition of *Sniper!* was a redesign of the earlier game of the same name.

Ambush! was an innovative solitaire game based on a system of paragraph readings and a sleeve-and-card system that revealed data about the game environment as the player navigated his soldiers over the map. Set in the European Theatre of Operations in WW II, it spawned three sequels as well as a second series of games set in the Pacific (*Battle Hymn*) as well as a two player version (*Shell Shock*). Ambush! and all its successors were, however, self-admittedly more oriented on action-adventure than a true simulation of WW II combat.

Firepower was arguably the most realistic man-to-man treatment, with an attendant increase in complexity (there were, for example, arrow counters to indicate which side of a tree a soldier might be lying behind).

- *Up Front* (Avalon Hill) was a man-to-man game, however, it was not technically a "board game" because there was no mapboard in play; the game was driven by playing cards and dice, with individual soldiers represented by cards laid on a playing surface.

Computer Games

True "Man-to-Man" games on the computer are rare, unless one counts First Person Shooters (FPS). Most FPS games are not realistic simulations, such as *Medal of Honor* or *Call of Duty*, mainly due to the maze-like environment, scripted storyline, and unrealistic casualty assessment. The limited focus of these games tend to highlight individual action-adventure rather than realistic analysis of combat at the individual level.

More realistic man-to-man games for the computer are known as Tactical shooters; an example is Operation Flashpoint. OFP and its sequels allow the player to give limited tactical commands to an entire squad of men while still engaged in a first person perspective, and in online play several dozen players could take on individual personas in various small-unit missions. Fatal and non-fatal wounds to the player's character were realistically implemented. However, while storylines were still heavily scripted for solo play, this actually increased the level of realism in the simulation.

Third person man-to-man games have not been successfully translated to the computer in any large numbers.

Tactical games such as the Close Combat series were not true man-to-man games as the player could not control individual soldiers; only group commands were possible.

Notable examples of third person Man-to-Man games on the computer include:

- *Sniper* - a computer version of the boardgame, found on Compuserve.
- *Avalon Hill's Squad Leader* (Microprose, 2000) - based on Soldiers at War, Jagged Alliance, and X-Com, this was a man-to-man game with true fidelity to man-to-man board wargaming, being turn based. It was not well received commercially or critically.
- *Silent Storm*
- *GI Combat* (Freedom Games, 2002)
- *Eric Young's Squad Assault* (Matrix Games, 2003) - a rework of the unsuccessful *GI Combat* by the same developer.

VASSAL only

This game might be considered either a computer game or a board game depending on how it is utilized. The game is designed as a standard mapboard and dice game, with counters and character cards, but is sold only online for play in "VASSAL" (an online java-based software that allows for virtual boardgame play) or as a .pdf download for self-printing of the physical components, for play as a regular boardgame.

- *Special Forces* (Dan Verssen Games, 2005) - a unique "VASSAL" only cardgame also available

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Miniature Wargaming

Miniature wargaming is a form of wargaming designed to incorporate miniatures or figurines into play. The miniatures used represent troops or vehicles (such as tanks, chariots, aircraft, ships, etc.). The games may reflect historical situations and armies, or may be futuristic or fantasy-based.

Many miniatures games are played on a floor or tabletop, with terrain represented by miniature scenery (hills, forests, roads, etc.). In this respect, miniatures wargames theoretically offer players great freedom of play, as well as a visual spectacle. Movement of the miniatures is regulated using a tape-measure. However, like boardgames, miniature games can also be played using gridded terrain (demarcated into squares or hexagons) or even gameboards.

One of the main reasons people play miniature games, as opposed to computer or boardgames, is because many find the tactile element of soldiers and scenery on a tabletop to be aesthetically pleasing; additionally, some hobbyists enjoy the challenge of painting miniatures and constructing scenery. Miniature wargaming may be seen as combining many of the aesthetics of tabletop train modeling with an open strategy game predominantly, though not exclusively, with a military theme.

Scale

Scale is generally expressed as the approximate height of the figure from base of foot to eyeline (though some count to top of head - hence the possible confusion) in millimeters, as opposed to the ratio values used in scale modeling. Popular sizes include:

`54mm, 45mm, 28mm, 25mm, 20mm, 15mm, 10mm and 6mm.`

These roughly equate to ratios of:

`1:32, 1:35, 1:64, 1:76, 1:87, 1:144, 1:160 and 1:300.`

"HO" (1:87) and "N" (1:160) scale are popular among model railroad hobbyists. Some model railroad scales are close enough to the smaller-scale figures to provide usable structures and/or vehicles, possibly requiring some modification. Some wargamers use card model structures because of their economy and the ease of scaling them to appropriate sizes, and many wargamers scratchbuild their structures.

Part of the reason for the profusion of miniature sizes is the need for manufacturers to differentiate themselves in what is a niche market. This results in what has been termed 'scale creep' where miniatures listed in a catalogue may be identified by a measurement, but in reality may vary significantly from that advertised size. This is to encourage the purchaser into brand loyalty based on the aesthetic desire to maintain a look of uniformity on the tabletop.

Also, choice of miniature scale is a direct reflection of the scope of the game to be played. Larger scaled figures (25mm and up) tend to be used in skirmish games where the single miniature represents (or signifies) a single man/animal/vehicle. This is for reasons of artistic sensibilities - a few single models do not capture the impression of many hundreds of individuals as if seen from a distance, and also for economic realities - larger figures are more expensive and consume proportionately more room on the playing surface.

Smaller scaled miniatures are typically mounted in groups and moved as groups. This creates the visual effect of a large mass of combatants, allowing games simulating platoon, company (military), battalion, and even corps level actions.

Historically, the perceived and agreed ratios of representative models to represented 'real world' objects was explicitly stated. This was particularly true of rules systems that claimed some form of historical authority. However, with the growth and popularity of fantasy games such as Warhammer Fantasy, model to man ratios are now predominantly left implicit in most modern commercial rules.

Notable Miniature Wargaming Organizations

- Historical Miniatures Gaming Society - Also known as HMGS. A collective name name for several miniature wargaming societies/organizations. HMGS-EAST holds three major conventions: Cold-Wars, Historicon and Fall-In. HMGS-EAST also supports several smaller, yet equally as fun, conventions. HMGS-EAST also supports several affiliated clubs such as the South Jersey Confederation of Wargamers (SJCW). There are chapters of HMGS in most regions of the USA. A full list of chapters (with e-mail addresses and phone numbers of key contacts) can be found at www.hmgs.org.

Notable Miniature Wargamers

H.G. Wells - Known as the "Father of Miniature Wargaming" and author of the miniature wargaming classic Little Wars.
Don Featherstone
Duke Seifried
Mark Anderson
Charles Grant
George Gush
John Hill - known for his classic Squad Leader board game, also the author of the popular Johnny Reb rules
Phil Barker - founder of the Wargames Research Group, and inventor

of the De Bellis Antiquitatis game series.
Dave Wesley - Twin Cities area wargamer, his "Braunstein" wargame scenario was famous for putting the players in the persona of individual characters in a Napoleonic battle, and was one of the first role-playing games.
Walter Cronkite - Famous CBS News anchor.
Gary Gygax - Creator of Dungeons & Dragons (D&D).
Michael J. Varhola, creator of the Skirmisher miniature system and co-author of the Chevauchee medieval miniatures rules.
Bill Armintrout - Webmaster/Owner/Editor of The Miniatures Page.
Roy Harrison UK - game and rules designer latest noteable rules system being AK-Intervention for modern world wide small wars

Role-playing games

Main article: Role-playing game

During the 1960s and 1970s, two new trends in wargaming emerged: First were small-unit rules sets which allowed individual players to portray small units down to even a single figure. These rules expanded the abilities of the smaller units accordingly, to magnify their effect on the overall battle.

Second was an interest in fantasy miniatures wargaming. J.R.R. Tolkien's novel The Hobbit and his epic cycle The Lord of the Rings were gaining strong interest in the United States, and as a result, rules were quickly developed to play medieval and Roman-era wargames, where these eras had previously been largely ignored in favor of Napoleonic and Civil War gaming.

The two converged in a set of miniatures rules entitled Chainmail, published by a tiny company called Guidon Games, headquartered in Lake Geneva, Wisconsin. Later, in 1974, TSR designer E. Gary Gygax wrote a set of rules for individual characters under Chainmail, and entitled it Dungeons and Dragons. Further developments ensued, and the role-playing game hobby quickly became distinct from the wargaming hobby which preceded it, developments which are not within the scope of this article.

Rulesets

There are any number of miniature wargaming rulesets, including some which are available free on the internet. Most rulesets are intended for a specific historical period or fictional genre. Rules also vary in the model scale they use: one infantry figure may represent one man, one squad, or much larger numbers of actual troops.

Wargaming in general owes its origins to military simulations, most famously to the Prussian staff training system Free Kriegspiel. Consequently, rules designers struggle with the perceived obligation to actually 'simulate' something, and with the seldom compatible necessity to make an enjoyable 'game'. Historical battles were seldom fair or even, and the potential detail that can be brought to bear to represent this in a set of rules always comes at the cost of pace of the game and enjoyment. Most rules aimed at the non-professional hobby market therefore inevitably contain abstractions. It is generally in the area of the abstraction liberties taken by the designers that the differences between rules can be found. Most follow tried and true conventions to the extent that a chess player would recognise wargaming merely as a different scaled version of his or her own game.

Some miniatures games have achieved widespread popularity. Of particular note are the Games Workshop games - Warhammer Fantasy Battle, Warhammer 40,000 (science fiction), and The Lord of the Rings Strategy Battle Game. Games Workshop stores are open in most larger cities in the US and the UK. There is also a historical variant, Warhammer Ancient Battles.

Notwithstanding Games Workshop's success in attempting to drive a worldwide standard, there are dozens, if not hundreds of other manufacturers of miniatures and rules, each trying to carve out a portion of this niche market. Some are short lived. Others, such as Privateer Press's Warmachine, build 'steam' and market share through multiple media and distribution methods.

On historical wargames, the most popular Ancient-Medieval rulesets are Wargames Research Group (WRG) rules, like De Bellis Antiquitatis AKA DBA and associated games, including a fantasy variant Hordes of the Things and large-battle rules De Bellis Multitudinis AKA DBM. The older rulesets WRG6 and WRG7 are still also popular. Phil Barker and Richard Bodley Scott are designing the successor for DBM, De Bellis Magistrorum Militorum (DBMM). The WRG Renaissance ruleset is De Bellis Renationis AKA DBR.

Ætherverse (Multi-Verse)
All Things Zombie (Near Future Zombie Apocalypse)
American Battlelines (AWI, MAW, ACW)
AK47 Republic (Postwar)
Axis & Allies Miniatures (WWII)
Battlefleet Gothic (Space)
Battlefront WWII (WWII)
Battle of Five Armies (Fantasy)
Bayonets and Ideology (SCW)

Black Powder Battles (Napoleonics and similar)
BlitzkriegCommander (WWII)
Chainmail (Fantasy - obsolete)
Chain Reaction (Modern SciFi)
Charlie Company (Vietnam)
Classic Battletech
Close Action (Age of Reason/Enlightenment)
Command Decision (WWII)
Confrontation (Fantasy)
Conquerors and Kings (Ancients-Medieval)
Contemptible Little Armies (WWI)
Crimson_Skies
Crossfire (WWII)
De Bellis Antiquitatis DBA (Ancients-Medieval)
De Bellis Multitudinis DBM (Ancients-Medieval)
De Bellis Renationis DBR (Rennaisance)
DBX (Ancients-Medieval)
Dungeons & Dragons Miniatures (Fantasy)
Dwarf Wars (Fantasy)
Eight Hundred Fighting Englishmen (Colonial)
Epic Armageddon (Sci-Fi)
Ever Victorious Armies (19th Century)
Face of Battle (WWII, Modern)
Final Argument of Kings (SYW)
Fire and Fury (ACW)
Forlorn Hope (ECW)
Flames of War (WWII)
General Quarters (WWII Naval Combat)
Guns of Liberty (AWI)
Habitants and Highlanders (French and Indian War)
Heavy Gear (SciFi Mecha)
HeroClix
Heroscape
Hey You in the Jail! (Westerns)
Hordes of the Things (Fantasy)
I Ain't Been Shot Mum (WWII)
In the Name of Glory (Napoleonics)
In the Heart of Africa (Colonials)
Iron Stars (Post-victorian space fleet combat)
Jovian Chronicles (Sci-Fi "Gundam" like setting)
John Company (Colonials)
Johnny Reb 3 (American Civil War)
Koenig Krieg (18th Century European)
Lord of the Rings Strategy Battle Game (Fantasy)

Mage Knight (fantasy)
The Men of Company B (Vietnam)
Mechwarrior
Mordheim (Fantasy)
Mr. Lincoln's War (ACW)
Necromunda (Sci-Fi)
Nuts! (WWII)
Panzer Marsch (WWII)
Patrols in the Sudan (Colonial)
Piquet (Multiple periods)
Pirates of the Spanish Main
Poor Bloody Infantry (WWII)
Principles of War (17th Cent.-WWI)
Rapid Fire (WWII)
Rally Round the Flag (ACW)
Reaper Warlords (Fantasy)
Regiment of Foote (ECW)
Red Actions (RCW)
Republique (Napoleonic)
Rocket's Red Glare (War of 1812)
Rough Riders (SCW)
Santa Anna Rules! (MAW)
Senso (Samurai)
Shako (Napoleonics)
ShockForce (Sci-Fi)
Sons of the Desert (FFL in North Africa)
Spearhead (WWII)
Square Bashing (WWI)
Starship Marine
Starship Troopers
The Sword and the Flame (Colonial)
Tigers and Stalins (WWII Armor Skirmish)
Trench Storm (WWI)
Trench Wars (WWI)
Triumph of the Will (RCW, SCW)
Warfare in the Age of Discovery
Warfare in the Age of Reason
Warhammer 40k (Sci-Fi)
Warhammer Ancient Battles (Ancients-Medieval)
Warhammer English Civil War (ECW)
Warhammer Fantasy Battle (Fantasy)
Warlord (Fantasy in the world of Adon)
Warmachine (Steam Powered Fantasy)
Warmaster (Fantasy)

Warmaster Ancient Battles (Ancients)
Warzone game (Target Games AB)
Whites of Their Eyes (American War of Independance)

See also

- Simulation game
- Nation-simulation game
- Wargaming
- Role-playing game
- Tabletop game
- Computer and video games

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Tabletop Games

Tabletop game is a general term used to refer to card games, board games, parlor games, role-playing games, miniature wargames, tile-based games and other games that are normally played on a table or other flat surface. The term is used distinguish these types of games from sports and video games, which today enjoy more popularity than most tabletop games. In the case of role-playing games, the term distinguishes tabletop role-playing games from live action role-playing games and computer role-playing games.

Home | Up | Tabletop Role-playing Games

Tabletop Role-playing Games

Tabletop role-playing games are a form of interactive and collaborative storytelling. The term *tabletop* refers to the accessory materials usually used for such a game. Pencil, paper, dice, and rulebooks are standard. Some groups of players add pewter miniatures and graphical terrain grids to illustrate the action. This practice is part of the genre's historical debt to wargames.

Simple forms of role-playing exist in traditional children's games such as "cops and robbers," "cowboys and indians," and "playing house." Mature role-playing game participants are more sophisticated. Unlike a child who just wants to feel like a cowboy for a few minutes, a group of adults in a Wild West role-playing game will generate specific characters and an ongoing plot. Their goal is to reproduce the enjoyment of a Western film or a Western novel. Like the serial Westerns of old movie matinees, these episodic games often have weekly sessions that continue for months.

A crucial difference between role-playing games and traditional fiction is interactivity. Whereas a viewer of a television show is a passive observer, a player at a role-playing game makes choices that propel the action. Such role-playing games grow out of an older tradition where a small party of friends collaborates on a unique adventure. It is those sophisticated role-playing games that are the focus of this article.

Game Mechanics

In a typical role-playing game one participant assumes central responsibility. This is the gamemaster. Alternate terms for a gamemaster are narrator, referee, dungeon master (DM), or storyteller. In all cases they serve the same function. The gamemaster will establish a fictional locale such as a Wild West California gold rush town. The gamemaster decides where the gold is hidden and populates the area with minor figures such as merchants, saloon owners, and claim jumpers. Then the gamemaster generates events that move the plot.

Each of the game's other players creates one character. Each records that character's possessions, abilities, and vital statistics. Characters begin weak and improve over time. The player imbues a character with a fictional history and personality, essentially acting that role during game sessions. Most role-playing games are conducted like radio drama: only the spoken component is acted. Players step out of character to describe action and discuss game mechanics. With the exception of the gamemaster, all players form a single team. They can choose to become a group of gold prospectors or a group of outlaws. A typical campaign includes characters with complementary skills. A party of four might have two gunfighters, a doctor, and a rogue.

The gamemaster presents opportunities and obstacles. In a game session where the party meets a local rancher, the gamemaster acts as the rancher and offers a job hunting mountain lions. The players might decide to accept the job, woo the rancher's daughter, or try to steal his horses. Participants enjoy these open ended situations. Some powerful antagonist usually drives the story. A corrupt governor may be trying to force all the small miners off the land.

A shared understanding shapes the campaign. The gamemaster has final arbitration power. Commercially produced role-playing games offer a variety of environments and guidelines for enjoyable adventures. Each individual campaign, however, creates its own unique story.

Some Tabletop Gaming Terminology

- RPG: role-playing game
- GM: gamemaster
- PC: player character, a major story character associated to a particular player.
- NPC: non-player character, any character played by the gamemaster.
- Character sheet: the written record of a character's vital statistics.
- Character generation: the process of creating a new character (usually refers to PCs).
- Character race: dwarf, elf, or any other being a player might assume as a role. This term is not racist: all humans belong to the human race.
- Monster race, NPC race: any creature too different from normal society to be played by a player.
- Hit point: a numerical expression of a weapon's damage and of a character's ability to withstand damage.
- Experience points (EP, XP): an accounting system for a characters' life experience.
- Character level: expresses a character's expertise in a chosen field, ususally corresponding to a certain number of experience points.
- Red shirt: an expendable NPC, synonymous with *cannon fodder*. The term is inspired by the original *Star Trek* television series.
- God killer: an extremely powerful player character, so named for the fantasy genre tradition of pitting extremely advanced characters against fictional deities.
- Campaign: a unique role-playing game narrative. One group of *RuneQuest* players could accumulate several RuneQuest campaigns, each with its own characters and plot.

- Session: a group gameplay meeting. Each game session works out a chronological part of the plot.
- Metaplaying: the misuse of player knowledge, making character decisions based on information the character cannot know but the player does know.
- Roll playing: pejorative term for unimaginative role-playing that relies too much on rules and dice.

Online Text-based Role Playing Games

An **online text based role playing game** (**OTBRPG**) (also sometimes called a **Post By Post Role Playing Game** or a **PBPRPG**) is a somewhat common internet role-playing activity based on text-based websites instead of graphical interfaces. The origins of this style of role-playing are unknown, but it most likely originated in some form during the mid to late 1980s when BBS systems began gaining in popularity. Today, hundreds of players all over the internet play OTBRPGs using countless forms and systems of rules to role-play characters, without the rigid systems of a Tabletop RPG or Video Game.

The OTBRPG method of role playing has many advantages and disadvantages in comparison with more traditional role playing systems. On the one hand, the freedom that the style allows the players to have, in addition to using writing as a medium, gives the players an opportunity to truly shine, sometimes writing a piece that could be worthy of a published novel. The vastness of the internet also makes it much easier to get a group of individuals to get together and play a game. This freedom, though it is a great strength to the system, also has the potential to be a great weakness. Such broad freedom of expression can easily be grossly abused, most often by new players unfamiliar with the mostly unwritten etiquette of the OTBRPG community. This has caused many more experienced players to form tightknit cliques.

Though countless systems of rules exist, far too varied to be properly summed up, there is a single universal criterion that separates role-playing from collaborative writing — there must be a variable under the control of one or more players that some other players cannot control. The most common example of this is for each player participating in the activity to have their own characters that no other participant may write dialogs or actions for. This is generaly known as power-playing or god-modding the character (or eventually the game in general). Others refer as god-modding being all-powerful and power-playing controlling other characters' actions. There are written and unwritten rules about power-playing and god-modding.

See also

- Role-playing game
- Computer role-playing game

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LARP

A **live action role-playing game** (or **LARP** as it is often known) is a form of role-playing game where the participants perform some or all of the physical actions of the characters they are playing. LARP may be considered a form of storytelling-based improvisational theater. LARP is alternately called **live action role-playing** or **live role-playing**.

LARP basics

In character vs. out of character

In traditional tabletop role-playing games, a player usually describes the words or actions of his or her character, framing the descriptions with introductory statements such as "My character says..." or "My character does..." In a LARP, since the actions of a player become the actions of the character, a special distinction must be made between actions a player takes as himself (out-of-character, or "OOC" actions, sometimes called "off-role" , "out-of-game" or "offplay"), and actions a player takes as his character (in-character, or "IC" actions, sometimes called "in-role" , "in-game" or "inplay"). There are often symbols, such as cards, ribbons, or gestures, to symbolize that a player is out-of-character, so the other players know not to interpret his actions as his character's actions.

Some LARPs encourage, if not demand, total immersion into the game lore and setting. This requires players not simply "play" their characters, but instead to "be" them. If a player wants to attack something or someone, they may simply do so, but they do so with ramifications: such acts may have political or social effects on the player. In this setting, players strive to stay true to their characters. Many players indicate that the more in-character a player gets, the more complete the experience is. In such LARPs, during the event running times, out-of-character references to the "mundane" world are discouraged and may lead to a deduction in the number of points awarded to the character.

Character Life and Death

Like most tabletop role-playing games, such as Dungeons and Dragons, many LARPs feature character growth and progression, where points are awarded to players for various criteria, such as attendance, interactions, or role-playing. These points are then applied to the character, allowing a player's character to "grow". Points may also affect a character's strength, affect resistance to magic or other effects, or afford additional abilities and powers.

Characters may also die in most LARPs. In some systems, this is merely a temporary phenomenon, putting the character out of play for a time. In most, it is a major setback, forcing a player to create a new character at base level and keeping the game system in balance. This ongoing life-and-death cycle within LARPs keeps them in a constant state of fluctuation, and can add emotion and excitement to each event. Most people who participate in LARPs will tell you that, at one time or another, the fear of character death has left them legitimately frightened, angry, happy or frustrated within game-play.

Physical vs. symbolic combat

In traditional role-playing games, conflicts are usually resolved with charts, graphs, and dice to produce a random outcome. In LARPs, many players feel that dice-based systems interrupt the flow of the game, and use a variety of methods to replace them.

Live Combat

One major method to resolve combat is to use actual physical combat. Firearm combat can be simulated either with thrown bean bags, or with toy, Airsoft or Lasertag guns. To ensure safety, some systems use Boffer weapons made of PVC with foam-rubber coating, or latex weapons. The objective is never to hurt the opponent, but to score hits, which deal fake damage often quantified based on the type of weapon used in the attack. Magic-using characters either throw "spell-packs" (usually small bean bags) at opponents, serving as a physical representation of magic hitting its target, or simply pointing at their target and shouting some words describing the effect. Games using this method of combat are often known as "Boffer" or "Live Combat" LARPs.

Some LARPs have their own crew for special effects (FX) rigging effects of magic-using pyrotechnics, smoke machines and smelly material. These crews are often recruited from young film and theatre technicians wanting to create a total film experience with the effects engulfing the participants. These crews might have in-character first aid roles acting making sure wounded people look bloody and wounded as they are carried from the scene of battle back to their camps, so that storylines based on healing and caring might develop.

An extreme form of Live Combat is where all damage is real. For some Nordic LARPs the 'Two Week Rule' applies - people can receive any damage that will heal in less than two weeks. Sprained ankles are allowed, broken legs are not.

Symbolic Combat

The other major method in use is symbolic combat. The LARP, such as the recent Mind's Eye Theatre, might use a system like Odds and Evens or Rock, Paper, Scissors, where two players throw hand symbols to generate a random outcome. Other LARPs use cards or dice, although one major advantage of symbolic combat is that you don't need any physical objects to do it. Yet another method is entirely deterministic, every character has a fighting ability score and in the prelude to a fight they quietly compare scores and then act out the fight with the outcome already known. Another benefit of symbolic systems is that conflicts other than physical combat can potentially be resolved using the same mechanics. Freeform role-playing games typically feature symbolic combat.

Steel Weapon Combat

A lesser-known combat alternative is steel weapon combat system, developed in Scandinavia in the 1990s. This system employs unsharpened steel weapons, which may only be carried and used by players trained and tested by the organisers prior to the game, and therefore limits physical fighting to a weapon-carrying minority while other players pursue other goals and stimuli. Proponents of the steel weapon system claim that it encourages style and realism, rather than the competitiveness they see as a feature of the 'boffer' system.

Blunt steel weapons are often used in Historical reenactment groups, so the weapons and the skills to use them safely are readily available, especially given that many historical reenacters also play in LARPs.

No Combat

Some LARPs avoid combat whenever possible, leaving only minimal or non-existent combat systems. Many murder-mystery

LARPs lack any combat system; the focus is entirely on social interaction and investigation. Some games that discourage and penalize combat might use very simple rules, like pointing a toy gun at someone and shouting "Bang!" means that the target character is dead.

Genre and setting

LARPs can have as many genres and settings as novels, plays, or movies. However, there are some standard genres that comprise the most common LARPs.

Fantasy genre LARPs are usually set in pseudo-historical worlds that are inspired by legends and fantasy literature. These settings generally have very low technology, some magic, and non-human species based on myth and legend. Examples include Elves, Dwarves, Orcs, Faeries, etc.

Sci-fi genre LARPs are a little less common but take place in futuristic settings with high technology and possibly aliens but usually without magic. Examples include combat-heavy post-apocalyptic LARPs, dystopian LARPs, utopian LARPs, space opera and cyberpunk.

Historic LARPs take place in our world, at some point in history. They can vary from a 1930s murder mystery to a feudal Japanese Samurai story. Historical accuracy is often prized in these LARPs, and there are similarities with Historical reenactment.

Published by White Wolf Game Studio under the brand name Mind's Eye Theatre, Gothic-Punk setting LARPs take place in the World of Darkness, a world much like our modern world, but with players taking on the roles of supernatural creatures, like vampires, werewolves, ghosts, mummies, and changelings. White Wolf also publishes a number of Historic Gothic-Punk style games, such as Dark Ages: Vampire and Wild West: Werewolf.

"Espionage" LARPs - For a number of years in the late 1980s, the International Fantasy Gaming Society (IFGS) ran "Undercover", a role-playing game set in the real community. Though many games were inspired by Ian Fleming's 007 novels, "The Man/Girl From U.N.C.L.E." TV series and even the "Get Smart" TV series, some were more related to realistic espionage adventures such as the "Three Days of the Condor" movie (marked down from "The Six Days of the Condor" novel). Player characters typically were formed in nation/state teams and pursued their missions in real world corporate offices, hotels, bus stations, doughnut shops, universities, movie theatres, parks and street corners, etc., where NPCs had been salted or were recruited, dead drops located, surveillance established or traps set. Combat, usually a minimal part of the game, was mostly by use of neon-colored water guns or spray bottles, water balloons and tagged items which served as poisons or explosives. Action sequences were usually reserved for venues controlled by the game organizers. Events such as escapes and car chases were resolved by a comparison of numbered cards, modified by player ability levels. There was an event, possibly an urban legend, involving a couple of exceptionally talented players in one game, who proved to have false real world names and addresses, and were reputedly a couple of agents of a real intelligence agency evaluating the game.

"Contemporary" LARPs occur in the present without the presence of the supernatural or supertechonological. Some are set in social situations easily recognizable to most players, such as a wedding, a family dinner or a high school class. Others are set situations that few players will have had direct experience of, such as organized crime, a Hollywood movie set, the UN security council.

Adapted LARPs are a sub-genre that can be found in any of the above types of game settings. Although other LARPs are often inspired by works of popular fiction, adapted LARPs are based entirely on a specific, usually well-known, fictional world. In these games, players may take on the roles of characters from the source material or those characters may appear as non-player characters. Examples of this sub-genre would include fantasy LARPs set in the World of Oz, the Lord of the Rings, or the Arabian Nights; historical LARPs set in the world of The Three Musketeers, the movies of Sergio Leone or the plays of William Shakespeare; or gothic-punk LARPs set in the worlds of Buffy the Vampire Slayer, Dracula, or The X-Files.

Game format

The style of LARP varies from game system to game system. Many of the regional LARPs are continuing campaigns, where a storyline is run and coordinated by members of the game. Other LARPs, including some of the largest ones such as Amtgard, do not have continuous or comprehensive storylines. The cohesion of the storyline of each character is left to the individual player to determine, and only special games or events contain an over-arching storyline.

A related element is the number of players playing at a time. Many LARPs (such as NERO, Amtgard and the Mind's Eye Theatre line) present most of their story with all of their players gathered together, perhaps several dozen players politicking at a gathering or defending a besieged town. This gives player interaction more rein to create much of the plot, and lets expenses be concentrated on the most reusable props. Other LARPs such as IFGS rely more on courses made up of separate encounters, that teams of perhaps four to eight players take turns making their way through. These more tightly-knit player groups make the adventure less social but more traditionally dramatic.

The timing of the LARP also varies from LARP to LARP. Some LARPs, and most notably those most-oriented towards continuous stories, only get together to play on specific occasions, usually about once a month. (NERO, which has its own splinter groups and spin-offs, is one such LARP.) Other LARPs meet every week. These groups, such as Amtgard, tend to have less focus on an over-arching storyline. Yet others, such as Maelstrom, organise events on the basis of three or four events a year, while even other systems run only once a year.

Many LARPs charge a fee to participate, which varies considerably from group to group and from region to region. For instance, the fee for Nordic LARPs ranges from a few euros for a half day event to upwards in excess of €150 for weeklong events; in the USA, a typical weekend-long freeform LARP might cost around $40 to $90. In Holland LARP fees can range from €5 for a one-day special to €120 for a four-day weekend event. Many organisations use a system that has fees of around €40 for early-paying participants and 65 for late (or gate) paying participants. Included in the fee are often food, tourist-tax, use of accommodations and some extra for the organisation to buy/make props.

There are no hard and fast rules on LARP categories, however. There are LARPs that are free and have little emphasis on plot-development that only meet once a month, while there are LARPs that meet every week that have an on-going, scripted storyline.

History

Technically, many childhood games are simple LARPs (even though they don't bear that name), and so in that sense LARPs may have been around since the dawn of humanity.

Fantasy LARPs (as distinct from pure historical re-enactments) probably originate with the founding of the Society for Creative Anachronism in Berkeley, California on May 1, 1966. A similar group, the Markland Medieval Mercenary Militia, began holding events on the University of Maryland, College Park in 1969. These groups were largely dedicated to accurately recreating medieval history and culture, however, with only mild fantasy elements. It was only after the publication of the first role-playing game (Dungeons & Dragons) in 1974 that LARPs truly came into their own.

Since LARPs rarely rely on print publications the way tabletop roleplaying does, but is dependent on local ideas and expertise, live roleplaying has been "invented" almost from scratch several times, though usually with the rumour of foreign LARPs as an inspiration. This has led to LARP practices and histories being extremely diverse. However, some LARPs, like Mind's Eye Theatre, have numerous manuals.

American history

Among the oldest documented fantastic live-combat groups is the Dagorhir Outdoor Improvisational Battle Games (Dagorhir), which was founded by Bryan Weise in the Washington, DC area in 1977, and is still in operation today. Dagorhir has been split, with many of its members choosing to fight amid Belegarth, a much more democratic version of the sport. The International Fantasy Gaming Society (IFGS), also live-combat but with a complex rules system more clearly influenced by Dungeons and Dragons, was started in 1981 in Boulder, Colorado. IFGS took its name from a fictional group in the novel Dream Park (by Larry Niven and Steven Barnes), which described highly realistic, futuristic LARPs. At about the same time (but before 1981), an Assassins' Guild was created at the Massachusetts Institute of Technology (MIT) in Cambridge, Massachusetts, to pursue "killer" or "assassin" style live-combat games with toy guns, but also to encourage creative design in Live Roleplaying Games.

In 1981, the Society for Interactive Literature (SIL) was founded by Walter Freitag, Mike Massamilla and Rick Dutton at Harvard University, Boston, Massachusetts. The club's first public event (called Rekon I) in February, 1983, at the Boskone Science fiction convention, probably marked the first fully modern theatre-style LARP game. A follow-on event (Reklone) was hosted by a different group at the Unicon Science fiction convention in Maryland in March.

A substantial part of the SIL membership broke off from that organization in 1991 and formed the Interactive Literature Foundation (ILF). The ILF organized semi-annual LARP conventions called Intercons. In 2000, the ILF changed its name to the Live Action Role-Players Association, though it continues to produce Intercons.

Amtgard is one of the most widespread groups in the US, and has chapters world wide as well. It began in 1983 in El Paso, Texas.

The Darkon Wargaming Club, located in the Washington, DC Metro Area, was founded in 1985 and provides both detailed combat and magic systems. It has small chapters in Wisconsin, Los Angeles, Idaho and a few other locations around the United States.

The Adrian empire was founded in 1987, and is portrays Western Europe from 1066 to 1603. It has chapters throughout the United States.

NERO live action roleplaying is another of the most widespread groups in the US, and was launched in 1988 by Ford Ivey in the Boston, Massachusetts area. There are currently over 50 NERO chapters in the US and Canada.

SOLAR, which stands for Southern Organization of Live Action Reenactments, is one of the more prevalent campaigns in the Southeastern United States. Founded in 1980 after splitting off from a NERO campaign due to game conflicts, its most well-known campaign, Clanthia, has been running for 15 years.

In 1992, the LIVE/WIRE Conductor Corps debuted at the Winter Fantasy gaming convention in Milwaukee, Wisconsin. Originally an offshoot of the RPGA, LIVE/WIRE became a major source for large-scale convention-run LARPs. LIVE/WIRE led to the formation of the Maze of Games at Gen Con and Origins.

The Northeastern US plays host to many, smaller, fantasy-based LARPs, such as Quest Interactive Productions and Mythical Journeys, both formed in the early 1990's by fantasy enthusiasts with a love for character roleplay and adventure but not for large player bases or complex rule systems. Some of these LARPs were formed as splinter groups of larger, more franchised LARPs, such as NERO. Most have long running, if not ever-running, plot arcs and are centered on interactions of the player-characters and the provided environment. Role-play interaction between player characters (PCs) and non-player characters (NPCs), who may also be referred to as "cast" or "staff", affects the plot direction. Smaller such LARP groups tend to run in the spring and autumn, utilizing summer camp facilities, such as 4H and group campgrounds, in their off-seasons.

UK history

Treasure Trap, formed in 1982 at Peckforton Castle, is generally recognised as the first LARP game in the UK, and most of the many hundreds of clubs and systems now active in the UK can trace their descent to it.

The largest and best-known of these groups is the Lorien Trust system, which grew out of Summerfest in the mid 1990s and hosts events with up to 4,000 players.

The UK now has an extremely wide variety of games and styles of games, covering genres from traditional swords-and-sorcery to science-fiction, gothic horror, pulp action adventure, wild west, and styles from story-telling to entirely player-led.

Curious Pastimes is a game that originated with a large number of players who aimed to create a similar fest-style system to the Lorien Trust with the aim of improving on the basic design to make a more enjoyable game. It was founded in the mid 90's it is a popular alternative to the Lorien Trust.

More recently, Profound Decisions has set up the Maelstrom game and gameworld as a large-scale alternative to the styles of game run by the older fest events. It is extremely popular and generally regarded as the herald of a new age of professionalism in LARP. It is also singular in that it is defined as player-led, where plot is eschewed in favour of players determining the events which take place. This system depends on large numbers of players with a wish to involve in politics, economics (Maelstrom possesses a complex and credible economic system) and personal interaction, but is seen by many players as very rewarding. Profound Decisions is run by Matt Pennington, who had formerly helped run another widely popular system called Omega LRP.

Evolution of LARP in the UK has been largely separate from US systems, with notable differences including the invention and widespread use of latex-covered weapon designs. Some UK players also play games in other Western European countries, which has led to some exchange of ideas between various European systems.

One major off-shoot of LARPs in the UK is the proliferation of Freeforms. These are events that typically last from four hours to three days, and are marked by little emphasis on either combat or character development, but more on plot development, and player interaction. There almost no NPCs, with GMs typically taking an overview role only. Most UK freefom characters are written specifically for that game, and tend to run to half a page for a short game, to ten or twelve pages for a weekend game. Major UK freeform events are GenCon UK, Dragonmeet and Continuum

Russian history

LARP has been played in Russia since at least the 1980s. The Russian word for LARP translates simply as "role-playing", since tabletop RPGs were unknown in Russia at the time LARP was invented or introduced there. Russian live role-playing is often practised under the banner of "Tolkienism" or Tolkien fandom. Regional traditions vary greatly in their history and practice, though the now defunct Soviet "Young Pioneers" organisation and the networks between former members seems to have played some role in spreading and coordinating the idea of live role-playing.

Nordic history

In the early 1980s, the Swedish LARP group Gyllene Hjorten [1] started a LARP campaign that is still going strong. This is probably the first LARP event in the Nordic countries. LARP in Finland started in 1985 and Norway was initiated in 1989, more or less simultaneously by groups in Oslo and Trondheim.

The Nordic LARP traditions, though usually invented independently of each other, have developed striking similarities and are also notably different from English language and German language LARPs. These differences are most obvious in the Nordic LARPs' skepticism towards game mechanics, a tendency to limit combat and magic - seeing these as "spice" rather than a necessary ingredient in LARP - and an emphasis on immersive environments where anachronisms and out of play elements (off-elements, such as visible cars or paved roads in a historical or fantasy setting) are avoided. The setting and roles may be given to the participants by the organizers, or suggested by the player to organizers, in either case usually based on a dialogue between the player and organizer. "character sheets", in the manner of tabletop RPGs, are for the most part not used.

When the game starts it lives its own life, wholly directed by the players (some predetermined events are often scheduled). A typical Swedish or Norwegian game lasts 2-5 days and has anywhere from fifty to hundreds of participants. A typical Danish or Finnish game lasts between four hours and a few days. Rules are designed for combat injury simulation and normally emphasize roleplaying of damage rather than abstract hitpoints (though this was not always so), featuring either padded weapons or blunt steel weapons. Each gaming organization uses custom rules, but simplicity and similarities make this less cumbersome than it would at first seem.

The annual Knutepunkt conference, first held in 1997, has been a vital institution in establishing a Nordic live role-playing identity, and in establishing the concept of "Nordic LARP" as a unique approach. A live-roleplaying avant-garde movement, which pursues radical experimentation and the recognition of role-playing as a form of art, has been connected to the Knutepunkt conferences. The scope of the Knutepunkt conference has expanded rather rapidly over the last few years with participants showing up from numerous non-Scandinavian countries. The last 2 or 3 years has seen participants from USA, Germany, France, Italy and Russia as well as from the main Scandinavian countries.

German history

The German LARP history is most easily found, by going to the German Larp calendar at Larp Kalender

The First LARP that has been cataloged is Samhain's Quest II on

April 14, 1995, although Draccon 1 in 1991 is generally held to be the first event of significance. LarpWiki.de has a page on history.

South African history

LARP in South Africa is mostly single evening events of fewer than four hours in length, with 8 to 20 players. Larger, longer-term campaigns are occasionally run, most using World of Darkness: Vampire.

There is a heavy emphasis on roleplaying. In the single evening events this means that there is little use of non player characters, costumes are the norm, and simple game mechanics are used. The standard conflict-resolution systems are symbolic, usually involving dice and very simplified character proficiency statistics. Special abilities are generally handled using cards that the player using the ability shows to those affected by it. Players are usually given detailed character sheets, sometimes of up to eight pages. These included background, goals and knowledge of other characters.

Cape Town is reputed to be the LARPing capital of South Africa, and there is a large archive of LARPs written by Capetonian designers (see under External Links). In recent years, there has been an increase in LARP activity in other communities, such as Johannesburg.

New Zealand history

New Zealand has a growing community of LARPers. Several long-term campaigns have been and are currently running. Typical genres include vampire, medieval fantasy, science fiction (including popular single-evening events of live Paranoia and post-apocalyptic settings), horror, and 1920s/1930s gangsters.

Emphasis in long-term campaigns varies depends on the setting. For example, Mordavia is a medieval dark fantasy which emphasises roleplaying very strongly, where Skirmish is more combat-based, and games such as Vampire: The Requiem are strongly political.

Many games are non-contact, while some encourage live combat with foam weapons. Magical effects are most often symbolised by reading of scrolls, throwing of spell packets, and circles outlined in rope for traps and magical portals.

Level of costume varies. In long-term campaigns, great care is often taken on player character costumes, as the character (personality, abilities, and background) will most often be invented by the player themselves. Non-player character costume is sometimes less detailed, but favourite monsters or villains may reappear frequently as they become well-loved by the players.

There are LARP communities in all the major cities, especially Auckland and Wellington.

The New Zealand Live Action Role-Play Society is an umbrella organisation created to promote and support LARP throughout New Zealand. It is a parent organisation of Mordavia, and is affilliated with other groups such as Skirmish.

Research and theory

Knutepunkt

The first in a series of annual LARP congresses taking place in the Scandinavian countries, Knutepunkt, was organised in Oslo, Norway in 1997. The name of the convention varies with the organizing country (the meaning of the name being 'nodal point' in the language of the hosting country).

Nordic LARP theory

Nordic LARP theory is mainly bound to the annual Knutpunkt conventions. For an introduction to Nordic LARP theory see the following publications:

Morten Gade, Line Thorup & Mikkel Sander (eds.): As Larp Grows Up. Knudepunkt 2003. ISBN 87-989377-0-7.

Markus Montola & Jaakko Stenros (eds.): Beyond Role and Play. Solmukohta 2004. ISBN 952-91-6842-X.

Petter Bøckman & Ragnhild Hutchison (eds.): Dissecting Larp. Knutepunkt 2005. ISBN 82-997102-0-0 (print) ISBN 82-997102-1-9 (online)

Academic works

- Geir-Tore Brenne Making and maintaining frames - a study of metacommunication in laiv play) . Graduate degree thesis, Department of Sociology and Human Geography, University of Oslo 2005. The study focus on the the Scandinavian tradition, being centred on the larp community in Oslo from 2001-2002. The text is in English, and is oriented towards introducing and presenting the activity to people who do not have much knowledge of Scandinavian larp in advance. It employs a sociological theoretical perspective.

Freeform Role-playing Games

Freeform role-playing games, also called **freeforms** or, in America, "Theater-style LARPs", are a type of Live action role-playing game (LARP) which occupy a middle-ground between traditional role-playing games and improvisational theatre. As with other forms of LARP, players are usually provided with details about their characters beforehand, and once the game is underway attempt to act in character, often in costume. Freeforms are distinguished from other LARP games in that they employ minimal or no rules.

Organisers act as referees (also known, as in other RPGs, as game masters or "GMs") to resolve disputes and adjudicate conflicts, sometimes with playing cards or some variation on scissors, paper, stone, but often without any specific rules. Often the game runs in an entirely unexpected direction, and the referees are sometimes as surprised as the players by the outcome. Because of their larger scale, freeform games are most often seen at gaming conventions, though they are also sometimes run by gaming clubs or a dedicated team of independant GMs.

Freeform games may use any setting, but unlike most other roleplaying games do not frequently use established settings written by games publishers. Instead, organisers either invent their own or adapt characters and situations from mythology, literature or popular culture.

Freeforms have sprung up around the world independantly, though some sources suggest the genre originated in Iceland. They are particularly popular in Australia, where rules-based LARP games have only become common during the last decade. Some Australian conventions run specific competitions for small-scale freeforms that challenge the players or the normal conventions of roleplaying in ways not possible with other types of games. Such freeforms may experiment with different narrative styles, contemporary social issues or unusual themes, and can be very realistic. Such games are often restricted to mature players.

Australian gamers also frequently use a "multiform" style of gaming, a hybrid of standard tabletop RPG and freeform which may also incorporate elements of LARP. In a multiform game, players sit at the table for social or strategic roleplaying and may even use standard tabletop rules, but will stand to act out more physical aspects of the game, often without use of the normal rules. This style of gaming is frequently used at Australian conventions and many tabletop games employ it without being specifically labelled as multiforms, though it is not often used in home games.

"Freeform" can also refer to computer-based (often chat-room-based or MUSH-based) RPGs which lack rules, instead relying on the player's acting abilities and commitment to a good story. (In MUSH settings, these are often called consent-based, because what happens to a character is influenced by a potential "veto" from that character's player.) These systems must either rely on carefully selected individuals or strict moderation, in order to prevent less mature players from taking advantage of the rule-free environment, for example by unrealistically shielding their characters from the consequences of their actions.

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Storytelling Games

A **storytelling game** is a game where two or more persons collaborate on telling a spontaneous story. Usually, each player takes care of one or more characters in the developing story. These characters are often reused in different stories, and players often bond quite closely with their alter ego. At least one participant takes the roles of the various supporting characters, as well as introducing non-character forces (for example, a flood). Since this person usually sets the ground and setting for the story, he or she is often referred to as the "storyteller" (often contracted to "ST") or "narrator". Any number of other alternate forms may be used, many of which are variations on the term "gamemaster"; these variants are especially common in storytelling games derived from or similar to role-playing games.

In contrast to improv theater, storytelling gamers describe the actions of their characters rather than acting them out, except during dialogue or, in some games, monologue. That said, live action versions exist, which are very much akin to theater except in the crucial absence of a non-participating audience.

The most popular modern storytelling games originated as a sub-genre of role-playing games, where the game rules and statistics are heavily de-emphasised in favor of creating a believable story and immersive experience for all involved. So while in a conventional tabletop role-playing game the announcement that one's character is going to leap over a seven-meters-wide canyon will be greeted with the request to roll a number of dice, a player in a storytelling game who wishes to have a character perform a similar feat will have to convince the others (especially the storyteller) why it is both probable and keeping within the established traits of their character to successfully do so. Some storytelling systems provide for randomness in the arbitration of the rules, often in the form of a contest of Rock, Paper, Scissors or a card drawn from a deck of cards. In practice, most "Storytelling" games are simplifed or streamlined forms of traditional tabletop role-playing games.

It takes a certain kind of gamer to enact in good storytelling, one that is more interested in the path to a goal than reaching it. Many role-playing gamers are more comfortable in a system that gives them relatively less freedom, but where they do not need to police themselves; others find it easier to enjoy a system where a more concrete framework of rules is already present.

White Wolf Game Studio's Storyteller System, which is used in World of Darkness role-playing games such as Vampire: The Masquerade and live-action games under the Mind's Eye Theatre imprint, is the best-known and most popular role-playing-style storytelling game.

See also

- letter game

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Interactive Storytelling Games

An **Interactive Storytelling Game** (ISG) is a game with a heavy emphasis on the story. Similar to both a Role-playing game (RPG) and a Storytelling game, an ISG will use a system of scripted scenes created by the *Storyteller*.

While a role-playing game (RPG) will be a collaborative narrative, and while a storytelling game will be a spontaneous story, an Interactive Storytelling Game (ISG) will have a scripted plot with a series of events that rise towards a final climax.

The *Storyteller* is the person in charge of creating the plot and running the game, while the rest of the players create characters that interact with each other and with the rest of the characters that are played by the *Storyteller*.

An Interactive Storytelling Game will use advanced Storytelling techniques to create an entire story, often to be told in a single gaming session.

The Storyteller will create the outer story, also referred to as the "spine" of the story, and the players will create the inner story, also referred to as the "heart" of the story.

The Storyteller will write an outline of the story he is telling, consisting of a main story goal, the main villain or antagonist, a list of scenes that will rise towards the final goal, and a climactic scene where the resolution to the story will occur.

The players will each run a single character that will interact with each other and the Storyteller's characters and the events and places described. Each character will have an inner need that will be blocked by a character flaw. Character needs and flaws are determined by the player and can be most anything desired. For instance, if a character's need is to fall in love, his flaw could be a distrust of the opposite sex.

The flaw will prevent the character from satisfying his need. Through the events of the outer story created by the Storyteller, the characters will learn to overcome their flaws and will finally realize their inner needs.

In this way, both the Storyteller and the players will tell a simultaneous story, both running parallel to the other.

A story will typically take from one to four gaming sessions to complete. In a RPG, the Gamemaster will create a campaign for the players to operate in. In an ISG, the Storyteller will only need the elements that he is using for the story. An ISG is similar to a person reading a short story or a novel, while a RPG will be an ongoing narrative tale.

Interactive Storytelling Games (ISG) are difficult to handle for game systems that have slow combat mechanics. This is because lengthy combat scenes will take too much time and the story will not advance very quickly. In a typical RPG, only a single plot point (if any) will occur in a session, while in an ISG, several plot points (each occurring in a separate scene) will occur in a session.

When using the outline format for creating stories, the Storyteller will be able to create an entire story quickly, often within 30 minutes (as opposed to several hours to create adventures for RPGs).

The theory of an ISG is that when the essential elements of a story are put in, it will provide a structure for the game and the session will go faster instead of slower.

Another difficulty when dealing with ISGs is the problem of railroading players. "Railroading" is a term used to describe a Gamemaster that forces the players to take a certain path, regardless of what they want to do.

In an ISG, the Storyteller must learn how to motivate the players, based on his knowledge of their characters. The conflict between the plot (what the Storyteller wants to do) and the character (what the player wants to do) can be resolved through the use of motivation. It has been said that a story is not what happens, but a story is who it happens to. A story is about how characters react to and are affected by the events in the story.

When the events of the story (plot) are not integrated with the desires of the players (motivation), then railroading will occur. The way this is avoided is by getting the player emotionally involved in the story so they do not feel railroaded because they are doing what they want (pursuing the goal, which is provided by the Storyteller that understands how to motivate them).

A properly structured story with a plot of scripted scenes will work without the players feeling railroaded because they are emotionally invested in the story.

Story Elements

The five parts of a story include:

1. Introduction.
2. Rising Action.
3. Complications.
4. Climax & Resolution.
5. Denouement.

Typically the first gaming session of an ISG will go like this:

1. Introduction of the heroes.
2. Inciting Incident (an event that creates the goal and introduces the villain). For example, the princess is kidnapped by the evil sorcerer, etc.
3. Scene 1:

Scene goal (acquire x or discover y).

Scene opposition (monster, etc.)

4-6. Scene 2, Scene 3, etc. ......

7. Climax. The big battle between the heroes and the main villain.

An entire plotline is written on one page, in the form of an outline.

Scene Format

1. Scene 1

Title of Scene

Scene Goal

Scene Opposition (monster, villain, etc.)

Scene Location (pick a place like a castle, village, roadway, etc).

Tie In to Next Scene

2. Scene 2 -5

Same as above.

A single line is used to describe each scene element (not several pages of text). For instance, a scene could look like this:

Scene 3: The Shadows Attack
Scene Goal: Escape from the haunted tower!
Scene Opposition: A dozen wraiths.
Scene Location: The Black Tower
Tie In: Inscription on tower that leads to the lost city (scene 4).

Additional Elements In addition to the single page used for the plot, a single page will be used to describe the main villain. Maps of the locations where the scenes take place are also usually prepared.

- Shadowstar Games, Inc. publishes the ISG, Fantasy Imperium, which is one of the first Interactive Storytelling Games.

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List of Role-playing Games

This is a list of role-playing games, subdivided by genre (although many games do not fit clearly into one genre or another). It does not include computer role-playing games or any other video games with RPG elements. Most of these games are tabletop role-playing games; other types of games are noted as such where appropriate.

Fantasy Genre

Agone (French) - edited in French by Multisim Editions and translated in English by Multisim Editions
Amber Diceless Roleplaying - based on the works of Roger Zelazny
ANKH (Adventurers of the North - Kalevala Heroes)
Arduin - The First cross-genre RPG, written by David A. Hargrave
Aria
Ars Magica
Axiom16 - (Bulgarian)
Battleaxe fantasy roleplaying by Sixteen Coal Black Horses
BattleDragons Play as dragons in a fantasy world by Spartacus Publishing.
Bloodlust (french) - edited by Asmodée Editions
Blue Rose (RPG) by Green Ronin
The Burning Wheel - High fantasy
Castles and Crusades - OGL System fantasy RPG published by Troll Lord Games
Castle Falkenstein - steampunk fantasy
Chivalry and Sorcery

Les Chroniques d'Erdor, an unusual French RPG of oneiric fantasy using a 54 card game, edited by Boite a Polpette.
Circe, by Bryce Harrington
Conan (a GURPS version by SJGames, and an OGL System version by Mongoose Publishing)
Clan Lord
Corum - an addendum to the Stormbringer RPG (aka Elric!)
Cursed Empire (formerly Crimson Empire, changed its name for trademark reasons)
Dangerous Journeys - created by E. Gary Gygax
The Dark Eye - Germany's most popular RPG, known in Germany as Das Schwarze Auge
Deliria: Faerie Tales for the New Millenium - by Phil Brucato. Published by Laughing Pan Productions
Donjon - by Clinton R. Nixon (Anvilwerks)
DragonNet - A free open-source fantasy RPG system
DragonMech - Where fantasy meets mecha!
Drakar och Demoner (Dragons and Demons) - Swedish fantasy RPG
DragonQuest - a now out-of-print RPG, suppressed by TSR
DragonRaid - a Christian RPG, created by Dick Wulf in 1984
Dungeons & Dragons - created by Dave Arneson and E. Gary Gygax, further editions by TSR, Inc. and Wizards of the Coast
Dying Earth - based on the stories of Jack Vance
Earthdawn
Elfquest by Chaosium - based on the works of Richard Pini and Wendy Pini
Elric!, by Chaosium, based on Michael Moorcock's Elric of Melniboné stories
Endyval - (Bulgarian) The first Bulgarian roleplaying system. Official site: Sivosten
Empire of the Petal Throne - set in M. A. R. Barker's world of Tekumel
Everquest - Pencil & Paper version of the populer MMORPG, Published by White Wolf, Inc.
Everway
Exalted
Fabula
Fairy Meat
Fantasy Hero
Fantasy Imperium - An Interactive Storytelling Game of Historical Fantasy by Shadowstar Games, Inc. [1]
The Fantasy Trip
Fantasy Wargaming - sold through the Science Fiction Book Club, while often considered incomplete and insufficient, this game has noteworthy elements and qualities that are still yet unseen in most

roleplaying games
Furry Outlaws
Furry Pirates
Grimm
Hackmaster
HârnMaster/Hârn
HARP - High Adventure Role Playing by Iron Crown Enterprises
Hawkmoon - an addendum to the Stormbringer RPG (aka Elric!)
Hero Wars/HeroQuest (role-playing game)
In Nomine - game based on the In Nomine Satanis / Magna Veritas French roleplaying game
Iron Gauntlets: Heroic Fantasy Roleplaying
Ironclaw - Edited by Sanguine Productions Ltd
Jadeclaw - Edited by Sanguine Productions Ltd
Jorune (or "Skyrealms of Jorune")
Krysztaly czasu (Polish, Crystals of Time) by MAG
Lands of Adventure
Legend of the Five Rings Role-Playing Game - asian-themed RPG, published by Alderac Entertainment Group
Legendy Armandie - fantasy RPG created by Skaven
Lejendary Adventure, created by Gary Gygax and published by Hekaforge Productions
LexiconPRG created by Neel Krishnaswami
Lone Wolf
Lord of the Rings Roleplaying Game - based on the fantasy works of J. R. R. Tolkien
Lords of Creation by Avalon Hill
Maelstrom (role playing game)
M.A.G.U.S. (hungarian)
Man, Myth & Magic by Yaquinto - RPG drawing on 4000 B.C. to 1000 A.D. Earth legends.
Middle Earth Role Play - based on the fantasy works of J. R. R. Tolkien
Midgard - the oldest German fantasy RPG
Monastyr (Polish), Monastery by Portal
Multiverser by E.R. Jones and M. Joseph Young
Nobilis by R. Sean Borgstrom
Palladium
Powers and Perils by Avalon Hill
Puppetland
Rangers of Taradoin by Sean-Robert Shaw
Rapture: The Second Coming by William Spencer-Hale, Quintessential Mercy
Rêve: the Dream Ouroboros by Denis Gerfaud (french, Rêve de

Dragon)
Riddle of Steel by Driftwood Publishing
Rifts by Palladium Games - crossover system
RMSS (Rolemaster Fantasy Role Playing) by Iron Crown Enterprises - fully expandable and customizable rules system
Rune Stryders, the Original Fantasy-Mecha Game
Runebearer by Chris Magoun - "Magic and religion clash in a ruined world" - current (2004) external link here
RuneQuest
Shadowrun (cyberpunk fantasy)
Skyrealms of Jorune
Stormbringer, by Chaosium, based on Michael Moorcock's Elric of Melniboné stories
Swordbearer by Heritage Games and Fantasy Games Unlimited
Talislanta by Bard Games
The Riddle of Steel by Driftwood Publishing
Timehunter by Red Axe
Tribe 8 (RPG) by Dream Pod 9
Tunnels and Trolls by Flying Buffalo
Usagi Yojimbo - based on the furry comic book series, Usagi Yojimbo, by Stan Sakai
Warhammer Fantasy Roleplay by Games Workshop
Weapons of the Gods by Eos Press - a wuxia-style game based on the manhua comic of the same name.
The Wheel of Time - based on The Wheel of Time novel series by author Robert Jordan
Wiedzmin (Polish) by MAG
World Of Warcraft by White Wolf -- a roleplaying game book based on the popular computer game by Blizzard

Science Fiction Genre

2300 AD by GDW

A/State by Contested Ground Studios
Aftermath! (1981) - by Fantasy Games Unlimited*
A I F - free SF rpg by NastiDyne
Albedo RPG - Based on the furry comic book series, Erma Felna by Steve Gallacci
Aliens by Leading Edge Games
Alternity by TSR

Babylon Project - Based on the Babylon 5 TV franchise

Babylon 5 by Mongoose Publishing
Battlelords of the 23rd Century by SSDC, Inc.
Battletech
Bitume by Croc (French - post-apocalyptical, Mad Max-like)
Blood Dawn by SSDC, Inc.
Blue Planet by Biohazard Games

La Compagnie de glaces (french - post-apocalyptical, from the novels of G.J. Arnaud)
Conspiracy X by Eden Studios - aliens, UFOs, and government coverups
C°ntinuum - time travel adventure
Core Command by Dream Pod 9
Cyberpunk 2013 by R. Talsorian Games (Out of print and superseded by Cyberpunk 2020
Cyberpunk 2020 by R. Talsorian Games; based on the mirror shades authors
Cybergeneration by R. Talsorian Games (alternate setting for Cyberpunk 2020)

Doctor Who RPG - based on the BBC television series
Dragonstar - where science fiction and fantasy blend perfectly.

Empire Galactique by François Nédelec (french - space opera)
Epoch Star
Ex Machina
EXO (Spanish - By Ediciones Sombra)

Fading Suns
Fringeworthy by Tri Tac Games
FTL:2448 by Tri Tac Games

Gamma World by TSR

HardNova II
Heavy Gear by Dream Pod 9

Incursion by Tri Tac Games

Jovian Chronicles by Dream Pod 9
Judge Dredd by Games Workshop
Judge Dredd by Mongoose Publishing

Legionnaire by FASA (Standalone roleplaying game for the Renegade Legion universe)

Mecha - A game based on Anime Mecha science fiction
Mega - les Messagers Galactiques (french - parallel universe)
Mekton - by R. Talsorian Games (based on Anime Mecha science fiction)
Metamorphosis Alpha (1976)
The Morrow Project
Multiverser by E.R. Jones and M. Joseph Young
Mutant (Target Games)
Mutant RYMD
Mutant Chronicles

Neuroshima (Polish) by Portal

Other Suns by Fantasy Games Unlimited -a space oriented game with a strong furry element

Paranoia by West End Games (WEG) - a satire of dystopian futures
Pax Draconis by Technicraft Design - a detailed rules heavy space opera with a percentile system
Phoenix Command by Leading Edge Games
Prime Directive by Task Force Games
Psiworld by Fantasy Games Unlimited - SF adventures with a focus on psi abilities.

Reich Star by Simon Bell and Ken Richardson (1991) as Creative Encounters. Fight Nazis in space.
Rifts by Palladium Games - crossover system
Robotech RPG by Palladium Games; based on the Robotech anime television series
Serenity by Soverign Press, based on the Firefly television series.
Shadowrun (cyberpunk fantasy)
Shatterzone
Jorune/Skyrealms of Jorune
SLA Industries
Space 1889 by GDW - Victorian Era Sci-Fi (steampunk)
Space Hulk
Space Opera (RPG) by FGU
Spacemaster - the SF adaptation of Rolemaster
Star Frontiers by TSR
Stargate SG-1 (RPG) by AEG
Star Hero - the SF adaptation of Fantasy Hero's Hero System

Star Trek RPG
Star Wars RPG

Tales from the Floating Vagabond
Timelord, a Doctor Who RPG
Timeship by Yaquinto
Traveller - by GDW, Marc Miller
Trinity - by White Wolf
Twilight 2000 by GDW(1984)

Universe - SF adaptation of DragonQuest

Warmachine - by Privateer Press

Horror Genre

All Flesh Must Be Eaten - Zombie survival horror game by Eden Studios
Beyond The Supernatural
Bureau 13: Stalking the Night Fantastic by Tri Tac Games
Call of Cthulhu - based on the works of H. P. Lovecraft
Chill
Deadlands: The Weird West
Dead Inside - A small-press RPG where the characters attempt to rebuild their lost souls through selfless and noble actions (and get superhuman powers along the way)
Kult - A Swedish game of Kabbalistic origins; The tag line is "Death is only the beginning", and the game is widely precieved as one of the darkest RPGs ever created.
Nephilim
Nightbane
Over the Edge
Sorcerer by Ron Edwards
Trevas, brazilian game about hell, earth, heaven and other worlds, and how the use of can lead them to destruction.
Unknown Armies
The Whispering Vault - a RPG about god-hunting
Witchcraft
World of Darkness product line by White Wolf Game Studio
Vampire: The Masquerade
Werewolf: The Apocalypse
Mage: The Ascension
Wraith: The Oblivion

Changeling: The Dreaming
Demon: The Fallen
Mummy: The Resurrection
Vampire: Kindred of the East
Hunter: The Reckoning
World of Darkness (new) new product line by White Wolf Game Studio
Vampire: The Requiem
Werewolf: The Forsaken
Mage: The Awakening

Satire/Humor Genres

Big Eyes, Small Mouth by Guardians of Order - anime based RPG
Buffy the Vampire Slayer - based on the TV show of the same name
Bunnies and Burrows
Fanhunter Spanish game based on the serie of comics of the same name
Ghostbusters RPG based on the Ghostbusters film series.
HackMaster
Human Occupied Landfill
In Nomine Satanis / Magna Veritas (french) by Croc (Siroz) (satiristic gang and spy wars involving angels and demons in the contemporary world)
Kalmo Finnish zombie rpg
Macho Women With Guns
MOU: Misadvetnures Of Unhappyland
Ninja Burger
Paranoia
Rocky and Bullwinkle RPG
Tales from the Floating Vagabond
Teenagers from Outer Space, an anime based RPG.
The Extraordinary Adventures of Baron Munchausen, a storytelling RPG by James Wallis based on the novel of Baron Munchausen
Toon - Cartoon adventure inspired by the classic cartoon series from Warner Brothers and MGM
TWERPS
Wuthering Heights by Philippe Tromeur, a parody of the novel Wuthering Heights
Zone (french) by Siroz (satiristic gang wars in the contemporary suburbs)

Superhero Genre

Aberrant by White Wolf
Blood of Heroes
Cartoon Action Hour by Spectrum Games
Champions by Hero Games
City of Heroes by Eden Studios, the tabletop companion to the City of Heroes MMORPG.
DC Heroes by Mayfair Games
DC Universe Role-Playing Game by West End Games
Godlike
Golden Heroes by Games Workshop
GURPS Supers by Steve Jackson Games
Heroes Unlimited by Palladium Games
Marvel Universe Role Playing Game by Marvel Publishing Group
Marvel Super Heroes Role-Playing Game by TSR
Mutants and Masterminds by Green Ronin Publishing
PowerGame
Silver Age Sentinels by Guardians of Order
Superhero 2044
Super Squadron - an Australian game "inspired" by Villains and Vigilantes
Superworld by Chaosium
Teenage Mutant Ninja Turtles and Other Strangeness by Palladium Games - based on the Teenage Mutant Ninja Turtles comic books.
Underground by Mayfair Games
Villians and Vigilantes by Fantasy Games Unlimited

Contemporary Action/Espionage/Adventure

AssassinX by E.N. Publishing - violent adventure
Danger International by Hero Games - espionage adventure
Espionage! by Hero Games - based on Second Edition Champions
Feng Shui - based on Hong Kong martial arts movies
Hong Kong Action Theater
James Bond 007 by Victory Games - based on the James Bond films
Merc 2000 (Twilight 2000 updated for the post-Cold War '90s)
Mercenaries, Spies and Private Eyes
Ninjas and Superspies by Palladium Books - martial arts and espionage adventure
Recon by Palladium Books - Vietnam War adventure

Top Secret by TSR - espionage adventure
Trauma (french) by Chroniques d'Outre-Monde (contemporary police and counter-terrorism adventures)
Spycraft by Alderac Entertainment Group - espionage adventure
Shadowforce Archer by Alderac Entertainment Group - a setting for Spycraft
Zone (french) by Siroz (satiristic gang wars in the contemporary suburbs)

Period Adventure/Alternate History Genres

Adventure! - pulp adventure by White Wolf
Arkéos [2] - pulp adventure by Extraordinary Worlds Studio (eWs)
Avant Charlemagne by François Nédelec (french - early Middle-Age)
Baron Munchausen - based on the tall tales of Baron Munchausen
Boot Hill - TSR - Wild West adventure
Bushido - samurai RPG
Cliffhanger by Fantasy Games Unlimited - 1930s adventure
Daredevils - pulp era mystery (not about the marvel character)
Dark Continent - colonial African horror
Deadlands: The Weird West
Dogs in the Vineyard - loosely based on the Mormon State of Deseret in pre-statehood Utah by Lumpley Games
Draug - Norwegian RPG set in medieval times based on the FUDGE engine.
Dzikie Pola (Wild Fields), a set in 17th century Polish-Lithuanian Commonwealth
En Garde! - Duellists from 17th century France published by Game Designers' Workshop and SFC Press.
Fallout - Post apocalyptic RPG based on the computer game of the same name.
Fantasy Imperium - An Interactive Storytelling Game of Historical Fantasy by Shadowstar Games, Inc. [3]
Forgotten Futures
Gangbusters by TSR - 1930s urban crime adventure
Indiana Jones (role-playing game) by TSR - based on the Indiana Jones films
InuYasha: The Secret of the Cursed Mask by Ban-Dai - based on the InuYasha anime series which is in the Feudal Era of Japan.
Justice Inc. by Hero Games - 1930s Pulp fiction oriented adventure, based on The Avenger
Légendes Celtiques (french)

Légendes de la Vallée des rois (french - ancient Egypt)
Miles Christi (french) - (Crusades and knights Templar)
Pendragon (or King Arthur Pendragon) Arthurian legend
Seventh Sea by Alderac Entertainment Company
SHWI-ISOT alternative history online RPG with a POD in 1800, where players have characters based on themselves.
Skull and Crossbones - Pirate Adventures on the Spanish Main by FGU
Space 1889 by GDW - Victorian Era Sci-Fi
Valley of the Pharaohs by Palladium Books
Wuthering Heights by Philippe Tromeur, a parody of the novel Wuthering Heights

Universal Roleplaying Systems

Action! System - Gold Rush Games' [4] - open game
Active Exploits
Amazing Engine
Basic Role-Playing
Big Eyes, Small Mouth
d6 System - West End Games' in-house system, based on the Star Wars RPG
d20 System - based on Dungeons & Dragons 3rd Edition rules
EW-System [5] - open game system by Extraordinary Worlds Studio (eWs)
FATE - Fantastic Adventures in Tabletop Entertainment based on the FUDGE engine
FUDGE - Free, Universal, Do-it-Yourself Gaming Engine by Steffan O'Sullivan
GURPS - Generic Universal Role Playing System by Steve Jackson (US)
HARPE - The Hugely Adaptable (action/anime) Role-Playing Engine, Free and quite adaptable
Hero System by Hero Games
Jags
Masterbook
Megaverse by Palladium Games
OGL System by Mongoose Publishing
OSIRIS RPG
Phoenix Command
Q10
Risus
Savage Worlds
The Window
TORG - published by West End Games

TWERPS
Unisystem by Eden Studios
WikiRPG
Worlds of Wonder by Chaosium
Wushu

Other products

Magazines

arcane
Dragon
Dungeon
The Excellent Prismatic Spray
Games Master International
The Gryphon
Imagine
Journal of the Travellers Aid Society
The Last Province
Polyhedron
Pyramid
The Unspeakable Oath
Warpstone
White Dwarf - a British magazine which originally covered all games, these days is purely a house magazine (sometimes not too far removed from a catalogue) for Games Workshop.
Valkyrie
Scrye
Shadis
The Space Gamer
White Wolf/White Wolf Inphobia

Comics

Dork Tower
Knights of the Dinner Table
Nodwick
Order of the Stick

Fanzines

Alarums and Excursions
Aslan
carnel
Demons Drawl
The Guildsman
Imazine
PTG-PTB (Places To Go, People To Be)
Tales of the Reaching Moon
Telegraph Road

Tradetalk
The Whisperer

See also

- Board game
- Computer role-playing game
- Letter games
- MUD
- Play-by-mail game
- Role-playing game
- Storytelling game
- Tabletop role-playing game
- Wargame

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Win-win Games

A **win-win game** is a type of game which is designed in a way that all participants can profit from it in one way or the other.

Types of win-win games

- In mathematical game theory such games are also called non-zero-sum games.
- In the context of group-dynamic games, win-win games are also called 'cooperative games', 'new games' or 'games without losers'.

Group-dynamic win-win games

Group-dynamic win-win games have been increasingly popular since the end of the Vietnam war and have been successfully applied to all levels of society for many good uses.

Group-dynamic win-win games emphasize the importance of cooperation, fun, sharing, caring and over-all group success in contrast to domination, egotistic behaviour and personal gain. All players are treated as equally important and valuable. Win-win games often also carry an ethical message of caring for the environment and a holistic approach to life and society. Win-win games are a powerful tool to give people self-confidence and a 'we' experience, especially when they have suffered from emotional isolation.

Example: All players try to carry a huge 'earth ball' (several meters in diameter) over their head while negotiating an obstacle course. This is a typical example of a win-win game for several reasons:

- there are no losers (everyone enjoys the accomplished task).
- all players are involved (no-one is left out or sits out).
- the earth symbolises responsibility for our environment (ethics is coming into play).
- the game is psychologically working on many levels (communication, supporting each other, having fun in a group etc)
- the game is gentle on mind, body, and soul (low risk of injury or harm).

One of the strongest promoters of cooperative games has been games facilitator and author Martin Schwarz. Born in Vienna, Austria, he taught and managed between 1970 and 1980 for eight years in the USA. He joined the New Games Foundation, which was founded in order to further fantasy, creativity and communication. Martin Schwarz applied cooperative games for the first time to the lecturing of management, leadership and adult education. In 1982 Martin Schwarz received the US-prize for International Cultural Management. Later he returned to Vienna, where he taught at the university and was the head of the Management Club of the Austrian Economic Society.

Note that there are also mathematical win-win games; the mathematical name for them is non-zero-sum games. In mathematics such games are often simply represented by a matrix of pay-outs.

See also

- game
- group-dynamic game

Literature

- 'Der Spielende Manager', Martin Schwarz, Mainz 1987, Namokel und Tosch KG. A book on win-win games.

Organizational-dynamic Games

Organizational-dynamic games are games that teach and reflect the dynamics of organizations at the folloing 3 levels:

- **individual** behavior (specific attitutes towards collaboration or knowledge sharing, competencies, character traits, motivation, change readiness, etc.)
- **group** and **network** dynamics (power and influence pattern, sub-group behavior, team dynamics as in Group-dynamic games, etc.)
- **cultural** dynamics (specific values, dominant mental and behavioral models, etc.)

Organizational-dynamic games are usually designed for the specific purpose of furthering personal development and character building, particularly in addressing complex organizational situations, such as managing change and innovation diffusion in a company, helping people in the organization to introduce productive collaboration patterns, managing difficult meeting situations, etc.

They have a proven history in helping managers and decision makers in better understanding organizational dynamics, the diagnosis of organizational contexts, and the impact of organizational interventions (corresponding to the actions you can undertake in such a simulation to achieve a result (e.g. a change in attitude or behavior).

Games such as the EIS Simulation are starting to be used extensively in business schools such as MIT, Stanford, or INSEAD, as well as in large corporations.

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Locative Games

A game in which the game play somehow involves your location. This can be for example be accomplished using GPS enabled phones, as it was done in Pac-Manhattan, where players play a real live version of Pacman.

These games usually only lasts for a certain amount of time, rarely running continously, and they usually require more people to organize together.

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Open Gaming

Overview

Open gaming is the movement within the role-playing game (RPG) industry that is somewhat analogous to the open source software movement. "Open gaming" refers to the practice of publishing content (rules, sourcebooks, etc.) under a "copyleft", open content, or free content license which grants permission to modify, copy, and redistribute some or all of the content, such as the publication of works derived or modified from the System Reference Document under the Open Gaming License. "Open gaming" can also be used to refer to a type of game event, typically at game conventions, where players are free to join at any time. This article deals with "open gaming" in the former sense.

A number of role-playing game publishers have joined the open gaming movement, largely as a result of the release of the System Reference Document under the Open Gaming License by Wizards of the Coast. Open gaming has also been popular among noncommercial role-playing game and supplement authors. Several licenses have been used to facilitate open gaming. Despite this, the concept has yet to make a significant impact on games outside of pen-and-paper RPGs, and most commercial RPG publishers continue to use proprietary game systems.

History

For many, the history of open gaming begins with the publication of the System Reference Document and the simultaneous release of the Open Gaming License. However, role-playing games had been licensed under open and free content licenses before this.

The Fudge Legal Notice

The Fudge role-playing game system was created in 1992 by Steffan O'Sullivan with extensive help from the rec.games.design community. One of the keys to the success of Fudge is that the author released it under the FUDGE Legal Notice, a license that made it essentially "open" for non-commercial use. The FUDGE Legal Notice is exceptional in that it is one of the few open gaming licenses which predates the publication of the System Reference Document under the

Open Gaming License. However, like most open gaming licenses, the FUDGE Legal Notice (more commonly known as simply "the Fudge license") was never intended to cover any work other than its eponymous role-playing game. The FUDGE Legal Notice permitted the creation of derivative works for personal use and for publication in periodicals. Derivative works which were to be distributed for a fee required written permission from Fudge's author, Steffan O'Sullivan. The details of the Fudge Legal Notice were modified and expanded from time to time as O'Sullivan updated his work, but the essential elements of the license remained unchanged (1993 1995 1995 2000).

In March 2004, Grey Ghost Games acquired the copyright of Fudge, and in April 6, 2005, they released a version of Fudge under the Open Gaming License.

Dominion Rules and Circe

Other "open" game systems published prior to the System Reference Document were the Dominion Rules fantasy role-playing system, the license of which permitted supplementary material to be written for its rules, and the Circe role-playing system, which was published by the WorldForge project under the GNU Free Documentation License.

Open Gaming License

Despite Fudge and other games, the open gaming movement didn't gain widespread notoriety within the role-playing game industry until 2000, when Wizards of the Coast (WotC) re-published the 3rd Edition of their popular Dungeons & Dragons role-playing system as the System Reference Document under the Open Gaming License. This move was driven by Ryan Dancey, then Brand Manager for WotC, who drafted the Open Gaming License and first coined the term "open gaming" with respect to role-playing games.

Open Gaming Foundation

The *Open Gaming Foundation* (OGF) was founded by Ryan Dancey as an independent forum for discussion of open gaming and a touch stone for the fledgling open gaming movement. The OGF consisted of a web site and a series of mailing lists, including the OGF-L list (for general discussion of open gaming licensing issues) and the OGF-d20-L list (for discussion of d20-specific issues).

The most common criticism of the Open Gaming Foundation was that it was primarily a venue for publicizing Wizards of the Coast. Ryan Dancey was an employee of WotC, and discussion on the mailing lists tended to focus on d20 and the OGL (both owned by WotC) rather than on open gaming in general.

Like most efforts to publicize "open gaming", the Open Gaming Foundation did not gain widespread support, and the most recent update to the OGF web site (as of 2005-10-08) was on 2003-08-04. However, the OGF mailing lists continue to be active, particularly the OGF-d20-L list, which is a haven for various d20 publishers.

Reaction to the OGL

The Open Game License gained immediate popularity with commercial role-playing game publishers. However, the OGL was criticised (primarily by amateur role-playing game authors) for being insufficiently "open", and for being controlled by the market leader Wizards of the Coast (see d20 System for more information). In response to this, and in an attempt to shift support away from the OGL and toward more open licenses, several alternatives to the OGL were suggested and drafted. Similarly, the popularity of the OGL inspired others to create their own, specific open content licenses. Virtually none of these gained acceptance beyond the works of the licenses' own authors, and many have since been abandoned.

October Open Gaming License

One of the licenses written in response to the OGL was the October Open Game License, a copyleft license published on 2000-12-27 by RPG Library. The OOGL was designed to present an alternative to perceived problems with the WotC Open Game License. The OOGL was used by two games before the authors of the OOGL ceased using it for their own work in late 2002 (and suggested that others do the same), in favor of the Creative Commons Attribution-ShareAlike License. RPG Library support for the October Open Game License ceased entirely on 2003-06-15.

Open gaming today

As of late 2005, the most common open gaming license in use by commercial role-playing game publishers is the OGL, and the most popular noncommercial licenses are the Creative Commons Attribution-ShareAlike License and the GNU Free Documentation License. There are at least eleven publishers currently producing material based on the WotC System Reference Document, and several more which make their products available under the OGL but which use game systems not based on the SRD. The number of role-playing authors who make their work available under the Creative Commons or GNU-FDL licenses is significantly higher, but the exact quantity is difficult to ascertain.

References

Open gaming licenses

Unlike open source software, there is no specification to define exactly what is and is not an "open gaming license", and any license that permits re-use of content can be considered an open gaming license.

The following licenses are currently in use as open gaming licenses:

- Creative Commons Attribution-ShareAlike License
- EABA Open Supplement License
- GNU Free Documentation License
- GNU General Public License
- Open Content License
- Open Gaming License
- Open Publication License

Open supplement licenses

An interesting development in the open gaming movement has been the arrival of "open supplement licenses": that is, licenses where the original rulebooks are covered by normal copyright, but a license permits the publication of supplementary material, such as adventures and new rules.

The following licenses are currently in use as open supplement licenses:

- Dominion Rules Licence
- EABA Open Supplement License

Open games

The following are considered open games:

- Action! System, published by Gold Rush Games
- Circe roleplaying system, published by WorldForge
- Four Colors al Fresco by Woodelf
- Fudge System Reference Document by Grey Ghost Games
- OGL System by Mongoose Publishing
    - Conan The Roleplaying Game
    - Lone Wolf
    - OGL Rulebooks
- System Reference Document, which is a subset of the d20 System by Wizards of the Coast
- T10 systemet introduced by Swedish role-playing company Rävsvans
- Violence: the RPG of egregious and repulsive bloodshed by Greg Costikyan
- Yags by Samuel Penn
-

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Party Games

Party games are games which share several features suitable to entertaining a social gathering of moderate size.

- The number of participants is indefinite and fairly large. Traditional multiplayer board games tend to accommodate four to six players at most, whereas party games generally have no fixed upper limit. Some games become unwieldy if more than twelve or fifteen play, but even for these the upper limit is flexible. Many party games simply divide everyone into two roughly equal teams.
- The players can take part at varying levels. Not everyone enjoys straining themselves to the utmost to win, so good party games have multiple ways to play along and contribute to everyone's enjoyment. For example, in Fictionary not everyone needs to create plausible dictionary definitions; humorous submissions are at least as welcome. In Charades, players can actively participate in guessing without taking a turn at acting.
- Player elimination is rare. Monopoly makes a poor party game, because bankrupt players must sit out while the remaining players continue. In contrast, no matter how far behind a team is in Pictionary, all players can participate until the very end.
- Some games are largely non-competitive, e.g. Murder mystery

games which are mainly group roleplays. Some party games, particularly lighthearted or adult games, introduce forfeits for losing players.

Common party games include
1000 Blank White Cards
Apples to Apples
Are You a Werewolf?
Articulate
Botticelli
Bobby's World
Catch Phrase
Categories (related to the commercial Scattergories and Facts in Five)
Celebrity
Charades
Consequences
Couch Of Power
Drinking Games
Cranium
Eat Poop You Cat
Fictionary (related to the commercial Balderdash)
Guess Who's You
Mafia
Murder Mystery Games
A Village Murder Mystery
[Host-Party Games]
Nuclear Name Game
Outburst
PervArtistry
Pictionary
Scissors
Seven minutes in heaven
Shout about movies
Snaps
Spin the bottle
Taboo
Truth or Dare? and related games such as "Strip or Dare?" and "Drink or Dare?"
Stupid Ninja Game
Trivial Pursuit
Twenty questions
White Elephant Gift Exchange
Why Did the Chicken...?
Wikipartia

Wink

Not all of the above are suitable for children's parties. Traditional children's party games (some of which are also popular with teenagers and adults) include:

The Bear and the Honeypot
Blind Man's Bluff
Farmer Wants a Wife
Hunt the Thimble (or slipper, or other object)
Oranges and Lemons
Pass the Parcel
Pin the tail on the Donkey
Poor Jenny
Poor Pussy
Postman's Knock
Spinning the Plate
Wink Murder

Party games are also used to define videogames like Mario Party and Sonic Shuffle, that resemble board games and meant to be multiplayer.

See also

- Drinking game
- Parlour game

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Parlour Games

A **parlour game** is a group game played indoors. During the Victorian era in Great Britain, these games were extremely popular among the upper and middle classes. They were often played in a parlour, hence the name.

During the 19th century, wealthy men and women had more leisure time than people of previous generations. This led to the creation of a variety of parlour games to allow these gentlemen and ladies to amuse themselves at small parties. Parlour games decreased in popularity in the first half of the 20th century as radio, movies, and later, television captured more of the public's leisure time. Though decreased in popularity, parlour games continue to be played. Some remain nearly identical to their Victorean ancestors; others have been transformed into board games such as Balderdash.

Many parlour games involve logic or word-play. Others, such as blind man's bluff, are more physical games, but not to the extent of a sport or exercise. Some also involve dramatic skill, such as in charades. Most do not require any equipment beyond what would be available in a typical parlour. Parlour games are usually competitive, but cumulative scores are not usually kept and the only reward for winning a round is the admiration of one's peers. The length and ending time of the game is typically not set; play continues until the players decide to end the game.

Examples

Examples of parlour games include:

Are you there Moriarty?
Squeak Piggy squeak
Charades
Consequences
Dictionary (Fictionary)
Snap-dragon
Twenty questions
Blind man's bluff
Mafia
Elephant's foot umbrella stand
Wink Murder
Willing game

See also

Party game

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Playground Games

Playground games are physical and verbal outdoor games which have been devised by groups of children for their own entertainment. These may be adaptations of existing sports or they may only exist informally in children's play areas such as parks, school playgrounds and streets around where children live.

As the rules and names of these games are passed down orally, there are many regional and generational variations. For example the game tag is variously known as 'it', 'tig', 'catch-as-catch-can', 'he' among others. Then there are variations on this basic theme such as 'off ground tig', 'budge' etc.

Many of these games are extremely old and have been played in one form or another for centuries. Others arise as a product of popular culture in a particular era or due to a particular toy or piece of equipment such as the skateboard, yo-yo, Rubiks cube or Scoobies.

Types of playground game

Selection methods

These are mini-games which are played to determine the initial set-up of a game, e.g. who is 'it' or which players are on which team.

'It' games

Probably among the oldest games played all over the world. One person is 'it' or 'on' and is up against the remainder of the players. The primary example of an 'it' game is tag which has many variations in all cultures and parts of the world. Hide and seek is another universal example.

Within this category a distinction can be drawn between games where there is always only one person who is 'it' at any time and games where more than one person can be 'it' at the same time. British Bulldog and 'Chain tig' are examples where more and more players become 'it' until one winner is left un-caught.

Ball games

Not necessarily using a ball as such, but rather any object which is considered as a ball for the purposes of the game, i.e. thrown, kicked, batted etc. For example, stones, tin cans, scrumpled paper etc.

Ball games are often derivatives of more formal sports such as Football or can be a kind of tag as above. Notable examples include:

'Donkey' and 'Spot'

The ball must be kicked, hit or thrown against an agreed length of wall by each player in turn. Every time the ball hits the wall the next player must attempt it from where it rebounds to. If a player misses the wall they are out (in 'Spot') or lose a life (in 'Donkey' they get a letter towards spelling out DONKEY) until they have lost all lives and are out.

Skipping games

These involve jumping over a rotating rope or several ropes and often use Skipping rhymes: rhythmic chants which determine the tempo of the jumping.

Word games

For example I spy, naming things starting with all the letters of the alphabet, linking words (e.g. "ball game", "game show", "show off"...)

Races

For example running, hopping, climbing.

Acrobatic and agility

For example hopscotch, limboing, handstands etc.

Performing games

Where players act out agreed parts, for example: cops and robbers, doctors and nurses

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Political Games

A **political game** is a game in which players roleplay and pretend to represent a government running a country.

Some games operate much like the traditional legislative government, relying on building consensuses to get things done. This includes:

- Nomic -- a game played by changing its own rules
- The Politics Game -- a game simulating a parliamentary democracy, in which any user active enough in discussion is allowed to form a party and discuss issues of the day in Parliament which effect the day to day running of the game/ forum. Notable for being run entirely on the phpBB forum

system rather than an actual game system.

- Senate Seeker -- a game simulating the United States government in which members of the prominent American political parties (and third parties) compete for the Senate and House of Representatives. The game includes active forums, discussion, Bill proposals and a working Supreme Court. The game is entirely text based and free.
- Extremapol -- a game simulating the Spanish parliamentary democracy, in which you can play as a major party member (PSOE, PP, IU) asturian, castillan, catalonian, galician and basque nationalists and a lot of other "third parties" like the neofascists "Frente Español" or the liberal "Unión Liberal Republicana" . The game includes non only the Congress of the Deputies (Low Chamber of the Spanish democracy) also the 17 autonomic parliaments. The game is entirely text based and free.

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Pub Games

Pub games are traditional games which are or were played in pubs, bars, inns, and taverns, particularly in England. Most are indoor games, though some are played outdoors (e.g. in the pub garden).

They include:

- Darts (various different games)
- Bowls (various different games)
- Dice games, such as Shut the box
- Card games, such as Cribbage
- Cue & ball games: billiards, bar billiards, snooker, bagatelle
- Bat & ball games: cricket, Knur and spell, Bat and trap
- Skittles - various different games, such as Devil among the tailors
- Board games: Nine Men's Morris, backgammon, draughts, chess
- Coin pushing/throwing games: Shove ha'penny, Pitch penny, Toad in the hole
- Other throwing games: Ringing the bull, Aunt Sally, quoits (indoor or outdoor)
- Other games: dominoes, Yard of ale, Dwyle flunking

References

- Finn, Timothy: *Pub Games of England* (Oleander Press)
-

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Darts

Darts is a game, or rather a variety of related games, in which darts are thrown at a circular target (*dart board*) hung on a wall. Though various different boards and games have been used in the past, the term 'darts' usually now refers to a standardized game involving a specific board design and set of rules.

As well as being a professional competitive sport, darts is a traditional pub game, commonly played in the United Kingdom, the Netherlands, the Scandinavian countries, the United States and elsewhere.

Dart boards

Dart boards are usually made of sisal fibers and each section is lined with thin metal wire. The numbers indicating the various scoring sections of the board are normally made of wire, especially on tournament-quality boards, but may be printed directly on the board instead.

Height and distance

In the standard game, the dart board is hung so that the bullseye is 5 ft 8 in (1.73 m) from the floor, and the oche (pronounced 'ock-ey'), or throwing line behind which the player must stand, is 7 ft 9.25 in (2.37 m) from the face of the board, though a few British pubs set it at 8 ft (2.44 m) or 8 ft 6 in (2.59 m).

History

Various designs of dartboard have been used, and regional variations remain in parts of Staffordshire, Lancashire and Yorkshire. In particular, the Yorkshire board differs from the standard board in that it has no treble ring and has a single, inner bull. The dartboard itself may have its origins in the cross section of a tree, although some historical records suggest that the first standard dartboards were the bottoms of wine casks, hence the game's original name of "butts". There is speculation that the game originated among soldiers throwing short arrows at the bottom of the cast or at the bottom of trunks of trees. As the wood dried, cracks would develop, creating "sections". Soon, regional standards emerged and many woodworkers supplemented bar tabs by fabricating dart boards for the local pubs.

The numbering plan known by many today has a 20 on top; however, a great many other configurations have been used throughout the years and in different geographical locations. By most accounts, the numbering layout was devised by Brian Gamlin in 1896 to penalize inaccuracy. Although this applies to most of the board, the left-hand side (near the 14 section) is preferred by beginners, for its concentration of larger numbers. Mathematically, there are 20 !, or 2,432,902,008,176,640,000 different possible combinations of arrangement of the dartboard's 20 sections (20 possible places to place the 20, 19 remaining sections for the 19, etc). There are many different board layouts that would penalize a player more than the current setup; however, the current setup actually does the job rather efficiently.

Scoring

The standard dartboard is divided into twenty numbered sections, scoring from one to 20 points, by wires running from the small central circle to the outer circular wire. Circular wires within the outer wire divide each section into single, double and triple areas.

Various quite different games can be played (and still are played informally) using the standard dartboard. However, in the official game, any dart landing inside the outer wire scores as follows:

- Hitting one of the large portions of each of the numbered sections, traditionally coloured black and yellow, scores precisely the points value of that section.
    - Hitting the thin outer portions of these sections, coloured red and green, scores double the points value of that section.
    - Hitting the thin inner portions of these sections, roughly halfway between the outer wire and the central circle and again coloured red or green, scores treble (or 3x) the points value of that section.
- The central circle is divided into a green outer ring worth 25 points (known as "outer" or "outer bull") and a red inner circle (usually known as "bull", "inner bull" or "double bull"), worth 50

points. The term "bullseye" can mean either the whole central part of the board or just the inner red section.
- Hitting outside the outer wire scores nothing.
- Any dart that does not remain in the board after throwing (for example, a dart that hits a wire and bounces out of the board) also scores nothing. Variations on this rule exist - some judge that a dart which obviously hits a scoring section but then subsequently drops out will count if caught before it hits the floor. In professional rules, a dart's tip must be touching a scoring section for the dart to count.

The highest score possible with 3 darts is 180, obtained when all three darts land in the triple 20. In the televised game, the commentator frequently announces a score of 180 in exuberant style.

Soft tip boards and darts

A relatively new type of board is the soft tip board, which is made of plastic and cast with small holes (about .08 inches, or 2mm) in the face. The soft tip darts are, in general, lighter than the steel tipped darts, and have a lower maximum allowable weight. The soft tip darts have semi-rigid tapered plastic tips that will penetrate the holes cast in the board to a depth of about .25 inches (6 mm) before lodging securely in place. The darts may be removed from the board by a gentle twist and pull. While still dangerous, soft tip darts are less likely to cause serious injury if they hit a person, and are far less likely to damage items they hit if they bounce out of the board. Since the plastic tips are prone to chip, bend and break with use, even inexpensive soft tip darts are made with replaceable tips, and replacement tips are sold in quantity.

Other than the difference in maximum allowable weights of darts, soft tip dart rules are the same as those for steel tip darts. One big advantage of the soft tip dart for the recreational player is the availability of electronic boards that will detect and score each dart hit, and track the score of each player. Many of these electronic dart boards have dozens of different dart games and variations programmed in, and will even coach a player as to where to aim his next throw.

Playing darts

A game, or "leg", of darts is usually contested between two players, who take turns in throwing up to three darts. Starting from a set score, usually 501 or 301, a player wins by reducing his score to zero. The last dart in the leg must hit either a double or the inner portion of the bullseye and must reduce the score to exactly zero. Successfully doing so is known as "doubling out" or "checking out". A throw that would reduce a player's score to one or below zero does not count, his turn ends, and his score is reset to what it was before that turn. Since the double areas are small, doubling out is usually the most difficult and tense part of a leg. Longer matches are often divided into sets, each comprising some number of legs.

Although playing straight down from 501 is standard in darts, other variations exist, notably "doubling in", where players must hit a double to begin scoring, with all darts thrown before said double contributing nothing to his score. Other games that are commonly played differ in their scoring methods. These include "Round The Clock", in which players must hit each numbered section in turn to win, and the more complicated Cricket.

Professional organizations

Of the two professional organisations, the British Darts Organisation (BDO), founded 1973, is the older. Its tournaments are often shown on the BBC in the UK, and on SBS6 in the Netherlands. The BDO is a member of the World Darts Federation (WDF) (founded 1976), along with organisations in some 60 other countries worldwide. The BDO organises all British darts players, with the exception of a small group of professionals.

In 1994 a breakaway organisation was formed, influenced by Sky Television, currently known as the Professional Darts Corporation (PDC) - in the Netherlands often televised by RTL5.

While the PDC tournaments often have a higher prize money, critics would say they are less prestigious than those organised by its traditional counterpart, the BDO.

It is generally accepted that PDC tournaments usually have a higher standard than those by the BDO. To win a PDC tournament, an average per three darts of over 100 is expected, whereas an average in the low 90's could win you a BDO tournament.

Professional competitions

The WDF World Cup (for national teams) has been played bi-annually since 1977.

The main traditional event is the ben.

Amateur competition

- The **American Darters Association** offers league organization for casual singles players throughout the United States
- The **American Darts Organization** is the world's largest national dart league, facilitating the organization of members' regional divisions, and promoting the sport via pub-based teams and individuals across the country
- The **Minuteman Dart League**, an ADO member, organizes players in the Boston Metropolitan area

Betting

On premises where alcohol is consumed, English law has long permitted betting only on games of skill, as opposed to chance, and then only for small stakes. An apocryphal tale relates that in 1908, Jim Garside, the landlord of the Adelphi Inn, Leeds, England was called before the local magistrates to answer the charge that he had allowed betting on a game of chance, darts, on his premises. Garside asked for the assistance of local champion William "Bigfoot" Anakin who attended as a witness and demonstrated that he could hit any number on the board nominated by the court. Garside was discharged as the magistrates found darts, indeed, to be a game of skill. More recently, in keeping with Darts' strong association with pubs and drinking, matches between friends or pub teams are often played for pints.

Famous Players

Eric Bristow
Steve Beaton
Bobby George
Trina Gulliver — First women's darts champion
Jelle Klaasen - Youngest dart champion at 21 years of age
Phil Taylor
Raymond van Barneveld
Jocky Wilson

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Quiz

A **quiz** is a form of game or puzzle in which the players (as individuals or in teams), attempt to answer questions correctly.

As Competitions

Quizzes may be held on a variety of subjects (general knowledge, 'pot luck') or subject-specific. The format of the quiz can also vary widely. Popularly known competition quizzes include

Pub quizzes
Quizbowls
in Canada:
Reach for the Top
in the United States:
College Bowl
National Academic Quiz Tournaments
Academic Competition Federation
in the United Kingdom:
Quizzing.co.uk
123quiz.net
Buzzerquiz (dormant)
University Challenge (televised)
quiz board games:
Trivial Pursuit
TV quizzes, also called quiz shows (Game shows TV/Radio)
Jeopardy!
Who Wants to be a Millionaire
The Weakest Link
BBC's MasterMind

In Education

A **quiz** usually a form of student assessment, but often has fewer questions of lesser difficulty and requires less time for completion than a test.

Other Quizzes

Additionally, a **personality quiz** may be a series of multiple-choice questions about the respondent without right or wrong answers. The responses to these questions are tallied according to a key, and the result purports to reveal some quality of the respondent. This kind of "quiz" was originally popularized by women's magazines such as Cosmopolitan. They have since become common on the internet, where the result page typically includes code which can be added to a blog entry to publicize the result. These postings are common on LiveJournal.

There are also many online quizzes, many webmasters have quiz sections on their websites and forums, phpBB2 has one MOD (Modification) which allows users to submit quizzes, this is the Ultimate Quiz MOD.

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Pub Quiz

A **pub quiz** is a quiz held in a pub. It is a largely British phenomenon, but was at its peak in the early 1990s. Pub quizzes are still quite popular and they may attract people to a pub who are not found there on other days. The pub quiz is a modern example of a pub game. The questions asked are wide and varied, but pub quizzes generally have a certain feel to them and hold certain things in common.

Quizzes for individuals or small teams

The format

Pub quizzes (also known as table quizzes) are often weekly or bi-weekly events and will have an advertised start time. This time is only approximate and it may be up to half an hour after it that any quiz-related activity begins.

First of all, one of the bar staff will come around with pens and quiz papers, which may contain questions or may just be blank sheets for writing the answers on. A mixture of both is common, in which case often only the blank sheet is to be handed in. Often the pub expects paper should be split in two - one half to hand in and one half to be kept as a record of the answers.

It is up to the patrons to form teams, which are generally based on tables, though if one table has a large group around it, they may decide to split up. Some pubs insist on a maximum team size (usually between six and ten). The team members decide on a team name, which must be written on all papers handed in.

Rounds

There can be any number of rounds between one and half a dozen, generally falling into the following categories, given in approximate order of commonness:

- Trivia rounds - these are usually spoken, either over a public address system or just called out. Common topics are:
  - General - a mixture, including those listed below, if they're not a separate round and also topics like history, geography and science. There may well be more than one of these.
  - Sport - comprising the statistics and minutiae of popular, well-known sports and general facts about others.
  - Entertainment - movies, TV shows and music.
- Picture rounds - these are on photocopied hand-outs and consist of photos of various famous people to be identified. The copies may be poor quality.
- Music rounds - these consist of songs played over the PA system. Usually the teams must identify the song and the singer or band.
- Puzzle rounds - generally on a handed-out sheet. Typically these consist of crossword puzzles, anagrams and basic maths problems.

The questions may be set by the bar staff or landlord, be bought from a specialist trivia company, or be set by volunteers from amongst the contestants. In the latter case, the quiz setter may be remunerated in the form of beer or a small amount of money.

Often questions may be drawn from the realm of 'everybody'-knows trivia, therefore leading to controversies when the facts are false or unverifiable. In addition as the quizzes are not formal affairs, slight miswordings may lead to confusion and have led to a recent court case in the UK.

In Quizo (a variety of pub quiz popular at various locations in the city of Philadelphia, contests generally consist of three or four rounds, and each team is permitted to declare a particular round as its "Joker" round (meaning that the team's score for that round will be doubled). The election of whether to "Joker" a round must be declared at the conclusion of the round, before the answers to that round's questions are revealed.

Marking

In some cases, the papers are marked by the bar staff. Alternatively, teams may have to mark their own answers and the handed-in papers are consulted only to check that prize claimants haven't cheated by altering their answers. Another method is to have teams swap paper before marking, though this can be divisive as there are inevitable disagreements over whether, for example, both names of a person need to be stated in order to get a point. In even the first case, the answers will be read out.

Prizes

Prizes are awarded to the highest scoring team and possibly the second and third place teams as well.

Many of the prizes revolve around alcohol. A case of beer or some money on a bar tab to spend at that pub are common. Lesser prizes may consist of various items sent by a brewery, such as t-shirts and beer glasses advertising their products.

Money may also be offered, although usually it may not be won every week. A team that scores a certain amount may get a cash prize, or there may even be a separate short set of questions. Sometimes unwon money is rolled-over, making a larger prize the next week.

Quizzes for league teams

The format

Another common format is: a quiz held as part of a pub league, just as in an American pool or a darts league.

Two teams, one home, one away play each other, responding, perhaps alternately, often orally, to a questionmaster.

Another interesting format for quizzing is called "infinite bounce". This format is generally used when the number of teams in the quiz is large - usually around 8-10. Every question is addressed to the team succeeding the team that answered the previous question. If no team answers the question, the next quesiton is addressed to the team succeeding the team to whom the previous question was addressed.

Points earned for each question are equal, irrespective of whether it was a direct question or a passed on question.

Marking

The questionmaster normally marks the teams' answers.

Prizes

No prizes are normally awarded at such a league match, but prizes and kudos may go to the quiz team winning a league or a knockout competition.

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Quizbowl

Quizbowl (also known as **Quiz-bowl**, **Quiz Bowl**, or **Academic Bowl**) is a family of games of questions and answers on all topics of human knowledge, commonly played in high school and college. In brief, the game is played with buzzers between (usually) 2 teams of (usually) 4 players each. Each match has (usually) 15 to 20 tossup questions which are read to all players. The first player to buzz-in correctly gets 10 points and the opportunity for his team to hear a bonus worth up to 30 points. An incorrect buzz loses 5 points and the question is completed for the other team. Some formats make use of other types of questions. The game is commonly referred to by several names as College Bowl or "Academic Competition," or variants thereof. "Quiz Bowl/QB" will be the generic term used here.

Subject areas

At the college and high school level, most questions are on subjects generally covered in a liberal arts education, or the liberal arts component of a degree. These include literature; history; science and math; social sciences; fine arts; geography; religion, mythology, and philosophy; and general knowledge. The choice of subjects and number of questions on each is called question distribution. To a lesser extent, questions are asked on engineering topics (including computer science), and popular culture, referred to as "Trash."

"Trash" subjects are generally considered to be current events, sports, pop culture, and some parts of the "general knowledge" catch-all. Much of traditional non-academic trivia falls under this heading. The use of the word "trash" in reference to these subjects was originally derogatory, but "trash-lovers" have reclaimed the word, and many label themselves "trash-meisters" or similarly with pride.

Question styles

Between the college and high school level, there are several styles of writing questions. While some are frowned upon, and other styles more generally favored, each style "tests" for a particular skill or type of recall.

Buzzer Beaters (toss-up)

Buzzer beater questions have virtually disappeared at the college level, and are frowned upon by most high school players that compete at higher levels (such as at national tournaments). They tend to be quite short, and relatively simple. An example:

QUESTION: *"Which company makes Macintosh computers?"*

ANSWER: *Apple (Computers)*

This type of question is written specifically to test the speed of players, and in no way discriminates the different levels of knowledge that the players possess. As such, these questions are frowned upon by players with a stronger knowledge base because smarter players lose their advantage. It is the player with higher confidence and faster reflexes who will answer first. Players who answer quickly are often said to have a "trigger finger."

These questions are also called "fast buzz", but may have alternative names in different parts of the country.

Pyramid Style (toss-up)

Pyramid style toss-up questions are the standard toss-up style written in college tournaments, as well as the high school tournaments which tend to attract stronger teams. Compare this example to the "buzzer beater" above:

QUESTION: *In 1977, this Silicon Valley garage startup sold its computers for $666.66. In late 1997, it became a Fortune 500 company led by one of its two founding Steves, hoping that the public would "Think different" and buy more of "The computer for the rest of us.". Name this company which in 1984 introduced the Macintosh.*

ANSWER: *Apple (Computers)*

While essentially the same question as the "buzzer beater", quizbowl players see them as two drastically different questions. In the pyramid style, there are more clues, generally starting at a high level of difficulty ("In 1977, this Silicon Valley garage startup sold its computers for $666.66"). While to an average person, this might seem to be a completely worthless tidbit of information, people who have studied the history of computers, business, or both may recall reading about the origins of Apple Computers. Thus, they could ring in at this time to score points. As the clues progress (Fortune 500, two founders named Steve, a marketing slogan that includes "Think Different", etc) the players begin synthesizing more and more information to lead them to an answer. The final clue is often the easiest, and in some cases may all but give the answer away (this final clue is thus often called "the giveaway").

In any event, a well crafted question in this style will almost always give the player with the stronger background in that area the best opportunity to answer first. It is for this reason that pyramid style toss-ups are popular with stronger players, as it typically removes (or at least reduces) the element of a "race of reflexes" to answer questions, and rewards the more studied player.

These types of questions are what truly separate quizbowl from board games like Trivial Pursuit, and television quiz shows like Jeopardy! In quizbowl, players may answer at any time, and are not required to wait until the question is complete. It is these questions that drastically raises the level of play in quizbowl matches over these other games.

Though there are relatively few complaints at the high school level, they tend to come from question writers who note the increased difficulty of writing a good question in the pyramid style, or players and coaches who complain that matches last too long (as the questions are longer). Typically, teams who tend to win rarely complain about the pyramid nature of the questions.

Related (bonus questions)

Multipart bonus questions are often seen in a patterned format; that is the individual parts of a bonus question are often related by some common thread. This common thread is often revealed (though not always) in the opening part of the bonus question (called the "lead-in"). For example:

BONUS: Given the title of an Irving Stone biography, identify the subject.

1. Lust for Life
2. The Passions of the Mind
3. Greek Treasure
4. Origin
5. The Agony and the Ecstasy

ANSWERS:

1. (Vincent) VAN GOGH
2. (Sigmund) FREUD
3. (Heinrich) SCHLIEMANN

4. (Charles) DARWIN
5. MICHELANGELO (di Lodovico Buonarroti Simoni) [alt: Buonarroti]

These bonus questions are usually the simplest to write, and this style is the most commonly encountered at virtually all levels of play.

Patterned (bonus question)

Just like "buzzer beater" questions, patterned bonus questions are held in lower regard by most of the better players, as it is the type of question that removes the advantage of working as a team to answer the questions. These questions are more commonly encountered in areas involving mathematics. For example:

BONUS: Given a pair of resistors, give their equivalent resistance if they were connected in parallel with each other."

1. 2 ohms and 2 ohms
2. 3 ohms and 5 ohms
3. 10 ohms and 20 ohms
4. 8 ohms and 16 ohms

ANSWERS:

1. 1 ohm
2. 1 and 7/8 ohms
3. 6 and 2/3 ohms
4. 5 and 1/3 ohms

This bonus question tests only a single skill, thus if only one player has memorized the skill, the question is reduced to one question, repeated four times.

List (bonus questions)

Some bonus questions are not broken into specific parts. Instead, players must be able to give their answers from a requested list. For example:

BONUS: In any order, identify any five of the six nations which border India.

ANSWERS:

1. (People's Republic of) China
2. (Kingdom of) Nepal

3. (People's Republic of) Bangladesh
4. (Islamic republic of) Pakistan
5. (Kingdom of) Bhutan
6. (Union of) Myanmar [alt: Burma]

This is another very popular style of writing for bonus questions. This style of question writing typically gives less information and forces teams to recall larger chunks of information all at once, and critically consider multiple options that the team may come up with; some of which may be wrong.

Gameplay

There are several different variants (or formats) of Quiz Bowl, but they generally share the following rules for playing.

Two teams of (typically) 4 players each sit at a buzzer set, which is like a set of TV game show buzzers. Anyone who 'rings' or 'buzzes' in prevents anyone else from doing so. If a round is timed, a countdown timer is used. Each game is played with a packet of questions, which a moderator reads.

There are two basic types of questions asked: tossups (typically worth 10 points) and bonuses (worth a maximum of 20-30 points). Other types of questions include written or worksheet rounds (in which each team writes its answers down on separate pieces of paper) or "lightning" or "rapid-fire" rounds, which usually consist of ten questions and sixty seconds, with only one team given the chance to respond. The other team may have the chance to answer the questions the first team missed; then the second team gets its own set of questions, and the first team may get to answer any missed questions.

Tossup questions

Tossup questions (or tossups) can be answered by any player from either team. Tossups must be answered individually, without the aid of teammates or the audience (Just like *Jeopardy!*). Aid by teammates is known as conferring and is generally not allowed. The first person from either side to buzz in may attempt to answer the question. Unlike the current version of *Jeopardy!*, one may interrupt the moderator and give an answer. If the answer given is incorrect, then no other member of their team may attempt to answer and only players from the other team may ring in (by use of a lockout system). Only one player per team may try to answer a given question.

Scoring:

- Question interrupted, wrong answer given: -5 points (In some tournaments and formats, there is no penalty for an interrupted question. However, this is uncommon.)
- Wrong answer given after end of tossup: 0 points
- Right answer given, any time during/after question: 10 points

Some formats add an additional possibility, known as a "power" tossup, that rewards a buzz made before the easier clues have been read:

- Question interrupted early, right answer given: 15 points

If a tossup is successfully answered, the answerer's team is given a bonus question.

Bonus questions

Bonuses can only be answered by one team (at the high school level, some formats allow the other team to answer parts of the bonus question which the first team fails to answer; this is called "rebounding" or a "bounce-back"). The team may work together (confer) to answer the bonus question. Usually, bonus questions require multi-part answers, and tossups single-part answers.

Scoring:

- Total of 20 to 30 points possible (ACF and NAQT formats currently set all bonuses at 30 points)
- Often have multiple parts, each worth a small number of points (most typically, three parts, each worth 10 points)
- No penalty for wrong answers
- Scoring is only done in multiples of 5

Games are either played in timed halves, or until a set number of tossups are read. In the case of a tied score, a tiebreaker is used. The nature of the tiebreaker varies by tournament and format. If a player or team feels that a question is in error, a protest may be made. This causes the question to be held for reevaluation, at which time points are adjusted. Rules for protests vary.

Formats

For tournament purposes, a format covers rules of play and question structure/content. For questions, this includes question topics, clue difficulty, order of clues, and writing style. Most questions contain multiple clues. Rules of play include player eligibility, scoring of questions, acceptable answers, and procedures for protesting a question.

In particular, ACF, CBCI, HCASC, NAQT and UC each have distinctive formats. Also, certain college tournaments and programs have developed their own distinctive formats. A few of them include the University of Pennsylvania (Penn Bowl), University of Michigan MLK, Stanford University, and Deep Bench (University of Minnesota/ Carleton College).

ACF format has a rigorous emphasis on academics, specifically Western Civ. There is no limit on graduate student participation. Questions are almost all on academic topics, and are more difficult than other formats. Toss-up questions are typically in pyramid style, with more difficult clues coming first, and a question should be answerable from any clue read. ACF is untimed; questions are generally much longer than CBCI questions. Games are usually played to a total of 20 tossups read.

CBCI or College Bowl format emphasizes comparatively short questions on academics, current events, pop culture, and general knowledge. The limits on participation are 6 years total in CBCI tournaments and only one graduate student per team. Questions tend to be structured so that most of the players know the answers to tossups read in their entirety. It is played in 8 minute halves, to a usual total of 22-24 tossups read, though there's no actual limit and 30-toss-up games, though quite rare, have occurred. Game play is relatively quick as a result. Related formats are HCASC (Honda Campus All Star Challenge) and UC (University Challenge).

NAQT format balances the diversity of subjects found in CB packets with question difficulty often seen in the ACF format. The limits on participation are complex; in a nutshell, as long as you're earning a degree, you can play. It is based on the Penn Bowl/MLK format. Game play is markedly different from ACF or CB. Timeouts and player substitution during timeouts are allowed. The NAQT also uses power tossups (extra points earned for a tossup answered early). Game length can vary a little, but a standard length for NAQT is 9 minute halves and a total of 28 tossups. National/Regional tournaments follow these formats very closely, while invitationals often modify these formats for their own use. NAQT also writes questions and helps organize tournaments at the high school level.

Other competitions evolved from these formats include competitions testing knowledge in the Bible, Latin, modern foreign languages, nursing, business ethics, Black History, athletic training, cooking, and literally hundreds of others. Many medical schools use quiz bowl-style competitions as part of their "grand rounds" specialty training for students and interns. In the 1990's, "Deaf College Bowl" for university teams with hearing-impaired students emerged.

In addition, other variants on the above quiz bowl formats are used at the high school level, including such formats as those of the Partnership for Academic Competition Excellence (PACE) and the Panasonic Academic Challenge (PAC or simply "Panasonic").

Tournaments

Quiz Bowl is generally played at tournaments, though high schools will also commonly play single matches against local schools, or schools within an athletic conference. Many schools hold on-campus tournaments (intramurals) where anyone can play. Some schools have programs which practice weekly (or more) during the school year. These programs are generally open to all students. They often include in their names "College Bowl," "Academic Competition," or "Quiz Bowl." They send teams to invitational tournaments sponsored by other schools or organizations.

For Quiz Bowl, a tournament is a gathering of teams who engage each other in several rounds of games. A tournament winner is determined using some criteria (win-loss record, playoff record, etc....). There are several classes of tournaments, which may use one of several formats.

Intramural tournaments invite students on a given campus to form teams and play. They are often called campus tournaments. On occasion, such tournaments may be open to teams of graduate students, and/or campus staff.

Invitational tournaments involve teams from various schools. They are run by the Quiz Bowl team/program at a given school. Invitations are sometimes sent to individual programs. However, most tournaments give out open invitations for any school to accept.

Major variants of Invitational tournaments include National/ Regional, Junior Bird, "Masters", and "trash" (popular culture) tournaments.

National/Regional tournaments are academic tournaments run by organizations not affiliated with a given school. These organizations include:

College Bowl Company Inc. (CBCI) - (Its Campus Programs and Regional/National Tournaments are run in cooperation with the Association of College Unions International (ACUI))
National Academic Quiz Tournaments (NAQT)
Academic Competition Federation (ACF)
National Academic Championship (NAC)

TRASH--Testing Recall About Strange Happenings, which runs trash tournaments open to all individuals, including college and university teams

In addition, CBCI administers the Honda Campus All-Star Challenge (HCASC) for Historically Black Colleges and Universities, and licenses University Challenge (UC) in the United Kingdom.

Such tournaments often have qualification requirements, sometimes including purchase of intramural tournament packets, or participation in regional tournaments (or other tournaments). They have unique rules above their associated formats, usually concerning eligibility and number of teams per school.

Junior Bird tournaments are restricted to collegiate players in their first or second season. Freshmen and sophomores are the intended targets, but upperclassmen or grad students who meet the criteria are sometimes allowed to play. The intent of these tournaments is to support player development by providing experience against other teams of similar skills, and to give newer players a chance to compete without being dominated by long-time veterans.

Masters tournaments are tournaments which do not place any restrictions on who may play. They are intended for those who want to play with people from other schools, have graduated, or are otherwise ineligible for college play. The intent behind them varies.

Trash tournaments are similar to Masters tournaments, except that all the questions are on trash subjects. Because of the non-academic format and lack of eligibility restrictions, a few trash teams consist of people (especially bar trivia enthusiasts) who have never competed in the academic side of quiz bowl.

Eligibility

Eligibility rules depend on the game. For the college game, in official College Bowl, NAQT or other events, there are severe eligibility rules, while other tournaments differ on whether senior or only junior undergraduate, graduate, and even non-students can play. In general the less skilled players can always compete, there is a debate about how much more experienced players should be involved (analogous to the hypothetical question of whether NBA players should be able to play college games, or even high school games).

First and second year undergraduates can always play. Junior and Senior undergraduates are typically excluded from junior bird type tournaments. Graduate students are excluded from undergraduate-only tournaments. Non-students are excluded from college tournaments.

The general intent is to ensure a degree of fairness, by preventing teams from having too many players who have too much experience who can swamp the entire field. College Bowl in particular allows only one graduate student per team. This is a controversial point.

Non students generally are restricted to certain tournaments, which are open to everyone. These tournaments include "Masters" tournaments, "Trash" tournaments, and the occasional intramural tournament.

Question sources

Questions come from one of three sources.

1. Organizations such as CBCI and NAQT, or other vendors sell packets for use in intramurals and invitationals. These are written by a small group of professional writers. They also write all of the packets used in tournaments they run, e.g. CB Regional Tournaments, and NAQT Sectionals.
2. The school hosting a tournament may choose to write all the packets used. Members of the host school's team generally write the packets. Typical of many invitationals.
3. Every team which participates in a tournament is expected to write a packet of questions. Typical of most invitationals.

Media coverage

No form of quiz bowl at the college level is broadcast regularly in the United States on a national basis. The "College Quiz Bowl" was broadcast on NBC radio from 1953 to 1955, General Electric College Bowl was televised on CBS then NBC from 1959 to 1970, College Bowl returned to CBS radio 1974-76, and HCASC was broadcast on BET until 1995. University Challenge is licensed from CBCI by Granada TV Ltd. and broadcast in the United Kingdom.

There are several local broadcasts of college and high school level quiz bowl.

There is no relationship between Quiz Bowl and Jeopardy! or any of the other TV trivia game shows, other than that many of the contestants may be the same. NAQT maintains a list of current and former quizbowl players at any level who have appeared on TV game shows.

See also

Academic games

Battle of the Brains - Richmond, Virginia and Hampton Roads area high school tournament
Bzzzt, wrong
It's Academic - Washington, DC area high school tournament
Academic Challenge - Cleveland, Ohio area high school tournament
Carper Award
Ken Jennings
QuizBusters Michigan area high school TV quiz produced by WKAR-TV
Pub quiz
Future Farmers of America Competitions
Reach For The Top, Canadian high school competition
Science Bowl - National high school tournament focused on science
SmartAsk, defunct Canadian high school tournament
University Challenge
National Academic Championship

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Singing Games

Singing games are games which pit multiple players against each other, or a single player against previous performances or a set standard. Objectives might include subjectively rated creativity, adherence to a theme, ability to mimic another performer, or objectively rated pitch and note duration.

Examples

Konami, makers of *Dance Dance Revolution*, has released a video game, *Karaoke Revolution*, that measures a player's pitch and gives a score based on the player's ability to maintain the proper pitch and duration for each note while singing along with a song whose lyrics are displayed on the screen. High scores are saved, so players can compete against each other or previous scores.

Whose Line is it Anyway?, in both its original British and later American manifestations, sometimes had events in which competitors had to spontaneously generate songs based on a given theme and in a given style. Performance was judged by the show's host, Clive Anderson or Drew Carey, respectively.

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Spoken Games

A **spoken game** is a game uses words instead of cards, boards, game pieces, or other paraphrenalia.

Spoken games can often also be categorized as guessing games, word games, or because of their freedom from equipment or visual engagement, car games.

Well-known spoken games include Twenty Questions, Riddle Me Ree, and Password. Because of their nature, spoken games are usually non-commercial.

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String Games

A **string figure** is a pattern formed by weaving string around one's fingers, or sometimes between the fingers of multiple people. String figures may be created and altered as a game or as part of a story. Various figures that can be made in sequence include a cup, then a glasses and a fish. Another series is mountains, river, fish, fisher, big fish, king and bones of the fish.

String figures were widely studied by anthropologists from the 1880s through around 1900, as they appear to have arisen independently as an entertainment pastime in many societies. Many figures were collected and described from Pacific Islanders, Inuit and other Native Americans. The first known book of string figures was String Figures and How to Make Them, by Caroline Furness Jayne.

The most popular and well known string game appears to be cat's cradle.

A great deal of additional information on string figures, on-going efforts to collect them worldwide, and their often unique methods of construction is available in the publications of the International String Figure Association (ISFA).

Further reading

- Caroline Furness Jayne, *String Figures and How to Make Them*, ISBN 048620152X

  An exhaustive study of this material culture
- Anne Akers Johnson, *String games from around the world*, Klutz 1996

  A book for beginners

- Kathleen Haddon, *String games for beginners*, Heffer 1974
  28 figures, 40 pages
- Camilla Gryski, *Cat´s cradle, owl´s eyes*, 1987, William Morrow & Co Library
  A book for beginners
- *Many stars and more string games*, William Morrow & Co Library 1985, ISBN 0-688-05792-6
  A book for beginners
- *Super string games*, William Morrow & Co Library 1996, ISBN 0-688-15040-3
  A book for advanced
- *Fascinating String Figures*, International String Figure Association 1999, Dover, ISBN 0-486-40400-5
  A book for advanced
- Julia P. Averkieva with Mark A. Sherman (contributor), *Kwakiutl string figures*, Anthropological papers of the American Museum History, Vol. 711992, University of Washington Press, ISBN 0-7748-0432-7
  199 pages
- J. Elffers and M. Schuyt, *Cat's Cradles and Other String Figures*, Penguin books 1979
  207 pages, a book for beginners and advanced
- Anne Pellowski, *Story vine*, Macmillan Publishing Compagny 1984, ISBN 0-02-044690-X
  116 pages - String stories

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Tile-based Games

A **tile-based game** is a game that uses tiles as one of the fundamental elements of play. It has different meanings depending on how it is used. There are many traditional games which use tiles, but when referring to video games, normally a tile-based game means a game which uses tiles as part of its graphic output.

Traditional games

Traditional tile-based games use small tiles as playing pieces for gambling or entertainment game. Some Board games use tiles to create their board, giving multiple possibilities for board layout.

Each tile has a back (undifferentiated) side and a face side. Tiles are usually rectangular, twice as long as they are wide and at least twice as wide as they are thick, though games exist with square tiles, triangular tiles and even hexagonal tiles.

Traditional Tile-based physical games

Chinese dominoes games
Dominoes
Mahjong (may be played with special playing cards instead)
Rummikub
Scrabble

Tile based games that use non-rectangular tiles

Blokus
Exago
Triominos
Tantrix

Tile-based board games

Alhambra
Betrayal at House on the Hill
Carcassonne
Diceland
Fjords
Zombies!!!

Video games

A tile-based video game is a type of video or computer game where the playing area consists of small rectangular, square, or hexagonal graphic images, referred to as *tiles*. The complete set of tiles available for use in a playing area is called a *tileset*. Tiles are laid out adjacent to one another in a grid; usually, some tiles are allowed to overlap, for example, when a tile representing a unit is overlaid onto a tile representing terrain. Tile-based games usually simulate a top-down or isometric view on the playing area and are almost always two dimensional.

Tile-based games are not a distinct game genre; rather, the term refers to the technology a game engine uses for its visual representation. For example, Ultima III is a role-playing game and

Civilization is a turn-based strategy game, but both use tile-based game engines. Tile-based game engines allow developers to create large, complex gameworlds efficiently and with relatively few art assets.

Early video game consoles such as Intellivision were designed to use tile-based graphics, since their games had to fit into video game cartridges as small as 4K in size. Regardless of their outward appearance or game genre, all Intellivision games are tile-based.

Notable tile-based video games include:

The Ancient Art of War
Centipede
Civilization series
Dig Dug, Bomberman and Super Boulder Dash, all of which highlighted the presence of tiles to create a scrolling video game version of a board game
Heroes of Might and Magic series
Gold Box D&D RPG series
Neverwinter Nights on AOL, the first graphical MMORPG
Pac-Man
Rogue
SimCity
Ultima series
Utopia, Intellivision

Most early tile-based games used a top-down perspective. The top-down perspective evolved to a simulated 45-degree angle, allowing the player to see both the top and one side of objects, to give more sense of depth; this style dominated 8-bit and 16-bit console role-playing games. Ultimate Play the Game developed a series of computer games in the 1980s that employed a tile-based isometric perspective. As computers advanced, isometric and dimetric perspectives began to predominate in tile-based games. Notable titles include:

Ultima Online, which mixed elements of 3D (the ground, which is a tile-based height map) and 2D (objects) tiles
Civilization II, which updated Civilization's top-down perspective to an isometric perspective.
The Avernum series, which remade the top-down role-playing series Exile with an isometric engine.

Hexagonal tile-based games have been limited for the most part to the strategy and wargaming genres. Notable examples include the Genesis game Master of Monsters, SSI's Five Star Series wargames, the Age of Wonders series and Battle for Wesnoth.

Some entirely 3D games have been tile-based; one notable example is the Neverwinter Nights series from BioWare.

Some games, like side-scrollers, are technically also tile based (that is, the playing area is made up of graphic tiles), but are normally not referred to as such.

Early tile-based games shipped with pre-constructed levels or generated levels at game startup (for example, with *SimCity* and *Civilization*) or on the fly (as with *Roguelike games*). A feature of tile-based games is that they allow for the creation of easy to use map editors, and many tile-based games come with an editor that allows players to construct their own levels. While completed levels for a game may hide all traces of tile-based technology, use of an editor for such a game strips away all polish and reveals a game's tile-based framework.

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Unclassified Games

Various games do not fit into the classification given in Game. For example:

Nomic
Rock, Paper, Scissors
Rope pulling (tug-of-war)
Musical chairs
Mornington Crescent
Staring contest
Slap tennis
The Game
Color or country

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Game Theory

Game theory is a branch of applied mathematics that studies strategic situations where players choose different actions in an attempt to maximize their returns. First developed as a tool for understanding economic behavior, game theory is now used in many diverse academic fields, ranging from biology to philosophy. Game theory saw substantial growth and its first formalization by John von Neumann before and during the Cold War, mainly due to its application to military strategy, most notably to the concept of mutual assured destruction. Beginning in the 1970s, game theory has been applied to animal behavior, including species' development by natural selection. Because of interesting games like the prisoner's dilemma, in which mutual self-interest hurts everyone, game theory has been used in political science, ethics and philosophy. Finally, game theory has recently drawn attention from computer scientists because of its use in artificial intelligence and cybernetics.

In addition to its academic interest, game theory has received attention in popular culture. A Nobel Prize-winning game theorist, John Nash was the subject of the 1998 biography by Sylvia Nasar and the 2001 film A Beautiful Mind. Several game shows have adopted game theoretic situations, including Friend or Foe? and to some extent Survivor. [1]

Although similar to decision theory, game theory studies decisions that are made in an environment where various players interact. In other words, game theory studies choice of optimal behavior when costs and benefits of each option are not fixed, but depend upon the choices of other individuals.

Representation of games

The games studied by game theory are well-defined mathematical objects. A game consists of a set of players, a set of moves (or strategies) available to those players, and a specification of payoffs for each combination of strategies. There are two ways of representing games that are common in the literature.

Normal form

The normal (or strategic form) game is a matrix which shows the players, strategies, and payoffs (see the example to the right). Here there are two players; one chooses the row and the other chooses the column. Each player has two strategies, which are specified by the number of rows and the number of columns. The payoffs are provided in the interior. The first number is the payoff received by the row player (*Player 1* in our example); the second is the payoff for the column player (*Player 2* in our example). Suppose that *Player 1* plays top and that *Player 2* plays left. Then *Player 1* gets 4, and *Player 2* gets 3.

When a game is presented in normal form, it is presumed that each player acts simultaneously or, at least, without knowing the actions of the other. If players have some information about the choices of other players, the game is usually presented in extensive form.

Extensive form

Extensive form games attempt to capture games with some important order. Games here are presented as trees (as pictured to the left). Here each vertex (or node) represents a point of choice for a player. The player is specified by a number listed by the vertex. The lines out of the vertex represent a possible action for that player. The payoffs are specified at the bottom of the tree.

In the game pictured here, there are two players. *Player 1* moves first and chooses either *F* or *U*. *Player 2* sees *Player 1*'s move and then chooses *A* or *R*. Suppose that *Player 1* chooses *U* and then *Player 2* chooses *A*, then *Player 1* gets 8 and *Player 2* gets 2.

Extensive form games can also capture simultaneous-move games as well. Either a dotted line or circle is drawn around two different vertices to represent them as being part of the same information set (i.e., the players do not know at which point they are).

Types of games

Symmetric and asymmetric

An asymmetric game

A symmetric game is a game where the payoffs for playing a particular strategy depend only on the other strategies employed, not on who is playing them. If the identities of the players can be changed without changing the payoff to the strategies, then a game is symmetric. Many of the commonly studied 2×2 games are symmetric. The standard representations of chicken, the prisoner's dilemma, and the stag hunt are all symmetric games. [2]

Most commonly studied asymmetric games are games where there are not identical strategy sets for both players. For instance, the ultimatum game and similarly the dictator game have different strategies for each player. It is possible, however, for a game to have identical strategies for both players, yet be asymmetric. For example, the game pictured to the right is asymmetric despite having identical strategy sets for both players.

Zero sum and non-zero sum

A Zero-Sum Game

In zero-sum games the total benefit to all players in the game, for every combination of strategies, always adds to zero (or more informally put, a player benefits only at the expense of others). Poker exemplifies a zero-sum game (ignoring the possibility of the house's cut), because one wins exactly the amount one's opponents lose. Other zero sum games include matching pennies and most classical board games including go and chess. Many games studied by game theorists (including the famous prisoner's dilemma) are non-zero-sum games, because some outcomes have net results greater or less than zero. Informally, in non-zero-sum games, a gain by one player does not necessarily correspond with a loss by another.

It is possible to transform any game into a zero-sum game by adding an additional dummy player (often called "the board"), whose losses compensate the players' net winnings.

Simultaneous and sequential

Simultaneous games are games where both players move simultaneously, or if they do not move simultaneously, the later players are unaware of the earlier players' actions (making them *effectively* simultaneous). Sequential games (or dynamic games) are games where later players have some knowledge about earlier actions. This need not be perfect knowledge about every action of earlier players; it might be very little information. For instance, a player may know that an earlier player did not perform one particular action, while she does not know which of the other available actions the first player actually performed.

The difference between simultaneous and sequential games is captured in the different representations discussed above. Normal form is used to represent simultaneous games, and extensive form is used to represent sequential ones.

Perfect information and imperfect information

An important subset of sequential games consists of games of perfect information. A game is one of perfect information if all players know the moves previously made by all other players. Thus, only sequential games can be games of perfect information, since in simultaneous games not every player knows the actions of the others. Most games studied in game theory are imperfect information games, although some interesting games are games of perfect information, including the ultimatum game and centipede game. Many popular games are games of perfect information including chess, go, and mancala.

Perfect information is often confused with complete information, which is a similar concept. Complete information requires that every player know the strategies and payoffs of the other players but not necessarily the actions.

Infinitely long games

For obvious reasons, games as studied by economists and real-world game players are generally finished in a finite number of moves. Pure mathematicians are not so constrained, and set theorists in particular study games that last for infinitely many moves, with the winner (or other payoff) not known until *after* all those moves are completed.

The focus of attention is usually not so much on what is the best way to play such a game, but simply on whether one or the other player has a winning strategy. (It can be proved, using the axiom of choice, that there are games—even with perfect information, and where the only outcomes are "win" or "lose"—for which neither player has a winning strategy.) The existence of such strategies, for cleverly designed games, has important consequences in descriptive set theory.

Uses of game theory

Games in one form or another are widely used in many different academic disciplines.

Economics and business

Economists have used game theory to analyze a wide array of economic phenomena, including auctions, bargaining, duopolies and oligopolies, social network formation, and voting systems. This research usually focuses on particular sets of strategies known as equilibria in games. These "solution concepts" are usually based on what is required by norms of rationality. The most famous of these is the Nash equilibrium. A set of strategies is a Nash equilibrium if each represents a best response to the other strategies. So, if all the players are playing the strategies in a Nash equilibrium, they have no incentive to deviate, since their strategy is the best they can do given what others are doing.

The payoffs of the game are generally taken to represent the utility of individual players. Often in modeling situations the payoffs represent money, which presumably corresponds to an individual's utility. This assumption, however, can be faulty.

A prototypical paper on game theory in economics begins by presenting a game that is an abstraction of some particular economic situation. One or more solution concepts are chosen, and the author demonstrates which strategy sets in the presented game are equilibria of the appropriate type. Naturally one might wonder to what use should this information be put. Economists and business professors suggest two primary uses.

Descriptive

The first use is to inform us about how actual human populations behave. Some scholars believe that by finding the equilibria of games they can predict how actual human populations will behave when confronted with situations analogous to the game being studied. This particular view of game theory has come under recent criticism. First, it is criticized because the assumptions made by game theorists are often violated. Game theorists may assume players always act rationally to maximize their wins (the Homo economicus model), but real humans often act either irrationally, or act rationally to maximize the wins of some larger group of people (altruism). Game theorists respond by comparing their assumptions to those used in physics. Thus while their assumptions do not always hold, they can treat game theory as a reasonable scientific ideal akin to the models used by physicists. However, additional criticism of this use of game theory has been levied because some experiments have demonstrated that individuals do not play equilibrium strategies. For instance, in the Centipede game, Guess 2/3 of the average game, and the Dictator game, people regularly do not play Nash equilibria. There is an ongoing debate regarding the importance of these experiments. [3]

Alternatively, some authors claim that Nash equilibria do not provide predictions for human populations, but rather provide an explanation for why populations that play Nash equilibria remain in that state. However, the question of how populations reach those points remains open.

Some game theorists have turned to evolutionary game theory in order to resolve these worries. These models presume either no rationality or bounded rationality on the part of players. Despite the name, evolutionary game theory does not necessarily presume natural selection in the biological sense. Evolutionary game theory includes both biological as well as cultural evolution and also models of individual learning (for example, fictitious play dynamics).

Normative

On the other hand, some scholars see game theory not as a predictive tool for the behavior of human beings, but as a suggestion for how people ought to behave. Since a Nash equilibrium of a game constitutes one's best response to the actions of the other players, playing a strategy that is part of a Nash equilibrium seems appropriate. However, this use for game theory has also come under criticism. First, in some cases it is appropriate to play a non-equilibrium strategy if one expects others to play non-equilibrium strategies as well. For an example, see Guess 2/3 of the average.

Second, the Prisoner's Dilemma presents another potential counterexample. In the Prisoner's Dilemma, each player pursuing his own self-interest leads both players to be worse off than had they not pursued their own self-interests. Some scholars believe that this demonstrates the failure of game theory as a recommendation for behavior.

Biology

Unlike economics, the payoffs for games in biology are often interpreted as corresponding to fitness. In addition, the focus has been less on equilibria that correspond to a notion of rationality, but rather on ones that would be maintained by evolutionary forces. The most well-known equilibrium in biology is know as the Evolutionary stable strategy or (ESS), and was first introduced by John Maynard Smith (described in his 1982 book). Although its initial motivation did not involve any of the mental requirements of the Nash equilibrium, every ESS is a Nash equilibrium.

In biology, game theory has been used to understand many different phenomena. It was first used to explain the evolution (and stability) of the approximate 1:1 sex ratios. Ronald Fisher (1930) suggested that the 1:1 sex ratios are a result of evolutionary forces acting on individuals who could be seen as trying to maximize their number of grandchildren.

Additionally, biologists have used evolutionary game theory and the ESS to explain the emergence of animal communication (Maynard Smith & Harper, 2003). The analysis of signaling games and other communication games has provided some insight into the evolution of communication among animals.

Finally, biologists have used the hawk-dove game (also known as chicken) to analyze fighting behavior and territoriality.

Computer science and logic

Game theory has come to play an increasingly important role in logic and in computer science. Several logical theories have a basis in game semantics. In addition, computer scientists have used games to model interactive computations.

Philosophy

Game theory has been put to several uses in philosophy. Responding to two papers by W.V.O. Quine (1960, 1967), David Lewis (1969) used game theory to develop a philosophical account of convention. In so doing, he provided the first analysis of common knowledge and employed it in analyzing play in coordination games. In addition, he first suggested that one can understand meaning in terms of signaling games. This later suggestion has been pursued by several philosophers since Lewis (Skyrms 1996, Grim et al. 2004).

In ethics, some authors have attempted to pursue the project, begun by Thomas Hobbes, of deriving morality from self-interest. Since games like the Prisoner's Dilemma present an apparent conflict between morality and self-interest, explaining why cooperation is required by self-interest is an important component of this project. This general strategy is a component of the general social contract view in political philosophy (for examples, see Gauthier 1987 and Kavka 1986). [4]

Finally, other authors have attempted to use evolutionary game theory in order to explain the emergence of human attitudes about morality and corresponding animal behaviors. These authors look at several games including the Prisoner's Dilemma, Stag hunt, and the Nash bargaining game as providing an explanation for the emergence of attitudes about morality (see, e.g., Skyrms 1996, 2004; Sober and Wilson 1999).

History of game theory

The first known discussion of game theory occurred in a letter written by James Waldegrave in 1713. In this letter, Waldegrave provides a minimax mixed strategy solution to a two-person version of the card game le Her. It was not until the publication of Antoine Augustin Cournot's Researches into the Mathematical Principles of the Theory of Wealth in 1838 that a general game theoretic analysis was pursued. In this work Cournot considers a duopoly and presents a solution that is a restricted version of the Nash equilibrium.

Although Cournot's analysis is more general than Waldegrave's, game theory did not really exist as a unique field until John von Neumann published a series of papers in 1928. These results were later expanded in the 1944 book The Theory of Games and Economic Behavior by von Neumann and Oskar Morgenstern. This profound work contains the method for finding optimal solutions for two-person zero-sum games. During this time period, work on game theory was primarily focused on cooperative game theory, which analyzes optimal strategies for groups of individuals, presuming that they can enforce agreements between them about proper strategies.

In 1950, the first discussion of the Prisoner's dilemma appeared, and an experiment was undertaken on this game at the RAND corporation. Around this same time, John Nash developed a definition of an "optimum" strategy for multiplayer games where no such optimum was previously defined, known as Nash equilibrium. This equilibrium is sufficiently general, allowing for the analysis of non-cooperative games in addition to cooperative ones.

Game theory experienced a flurry of activity in the 1950s, during which time the concepts of the core, the extensive form game, fictitious play, repeated games, and the Shapley value were developed. In addition, the first applications of Game theory to philosophy and political science occurred during this time.

In 1965, Reinhard Selten introduced his solution concept of subgame perfect equilibria, which further refined the Nash equilibrium (later he would introduce trembling hand perfection as well). In 1967, John Harsanyi developed the concepts of complete information and Bayesian games. He, along with John Nash and Reinhard Selten, won the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel in 1994.

In the 1970s, game theory was extensively applied in biology, largely as a result of the work of John Maynard Smith and his evolutionary stable strategy. In addition, the concepts of correlated equilibrium, trembling hand perfection, and common knowledge[5] were introduced and analyzed.

In 2005, game theorists Thomas Schelling and Robert Aumann won the Bank of Sweden Prize in Economic Sciences. Schelling worked on dynamic models, early examples of evolutionary game theory. Aumann contributed more to the equilibrium school, developing an equilibrium coarsening correlated equilibrium and developing extensive analysis of the assumption of common knowledge.

Notes

1. ^ GameTheory.net has an extensive list of references to game theory in popular culture.
2. ^ Some scholars would consider certain asymmetric games as examples of these games as well. However, the most common payoffs for each of these games are symmetric.
3. ^ Experimental work in game theory goes by many names, experimental economics, behavioral economics, and behavioral game theory are several. For a recent discussion on this field see Camerer 2003.
4. ^ For a more detailed discussion of the use of Game Theory in ethics see the Stanford Encyclopedia of Philosophy's entry game theory and ethics.
5. ^ Although common knowledge was first discussed by the philosopher David Lewis in his dissertation (and later book) Convention in the late 1960s, it was not widely considered by economists until Robert Aumann's work in the 1970s.

References

Textbooks and general reference texts

Gibbons, Robert (1992) Game Theory for Applied Economists, Princeton University Press ISBN 0691003955 (readable; suitable for advanced undergraduates. Published in Europe by Harvester Wheatsheaf (London) with the title A primer in game theory)
Ginits, Herbert (2000) Game Theory Evolving Princeton University Press ISBN 0691009430
Osborne, Martin and Ariel Rubinstein: A Course in Game Theory, MIT Press, 1994, ISBN 0-262-65040-1 (modern introduction at the introductory graduate level)
Fudenberg, Drew and Jean Tirole: Game Theory, MIT Press, 1991, ISBN 0262061414 (the definitive reference text)

Historically important texts

Fisher, Ronald (1930) The Genetical Theory of Natural Selection Clarendon Press, Oxford.
Luce, Duncan and Howard Raiffa Games and Decisions: Introduction and Critical Survey Dover ISBN 0486659437
Maynard Smith, John Evolution and the Theory of Games, Cambridge

University Press 1982
Morgenstern, Oskar and John von Neumann (1947) The Theory of Games and Economic Behavior Princeton University Press
Nash, John (1950) "Equilibrium points in n-person games" Proceedings of the National Academy of the USA 36(1):48-49.
Poundstone, William Prisoner's Dilemma: John von Neumann, Game Theory and the Puzzle of the Bomb, ISBN 038541580X

Other print references

Camerer, Colin (2003) Behavioral Game Theory Princeton University Press ISBN 0691090394
Gauthier, David (1987) Morals by Agreement Oxford University Press ISBN 0198249926
Grim, Patrick, Trina Kokalis, Ali Alai-Tafti, Nicholas Kilb, and Paul St Denis (2004) "Making meaning happen." Journal of Experimental & Theoretical Artificial Intelligence 16(4): 209-243.
Kavka, Gregory (1986) Hobbesian Moral and Political Theory Princeton University Press. ISBN 069102765X
Lewis, David (1969) Convention: A Philosophical Study
Maynard Smith, J. and Harper, D. (2003) Animal Signals. Oxford University Press. ISBN 0198526857
Quine, W.v.O (1967) "Truth by Convention" in Philosophica Essays for A.N. Whitehead Russel and Russel Publishers. ISBN 0846209705
Quine, W.v.O (1960) "Carnap and Logical Truth" Synthese 12(4):350-374.
Skyrms, Brian (1996) Evolution of the Social Contract Cambridge University Press. ISBN 0521555833
Skyrms, Brian (2004) The Stag Hunt and the Evolution of Social Structure Cambridge University Press. ISBN 0521533929.
Sober, Elliot and David Sloan Wilson (1999) Unto Others: The Evolution and Psychology of Unselfish Behavior Harvard University Press. ISBN 0674930479

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Combinatorial Game Theory

Combinatorial game theory (CGT) is a mathematical theory that studies a certain kind of game. These games are all two-player games which have a *position*, which the players take turns changing in certain well-defined ways or *moves*, trying to achieve a well-defined winning condition. CGT does not study games of chance (like poker), but restricts itself to games whose position is public to both players, and in which the set of available moves is also public. It can, in principle, be applied to games like Chess, checkers, Go, Hex, and similar board games, but these games are mostly too complicated to allow complete analysis (although the theory has had some recent successes in analyzing Go endgames).

In simple terms, by applying CGT to a *position* you are attempting to determine the optimum sequence of moves for both players until the game ends, and by doing so discovering the optimum move in the current position. In practice, this process is tortuously difficult unless the game is very simple.

CGT should not be confused with another mathematical theory, traditionally called game theory, used in the theory of economic competition and cooperation. Game theory includes games of chance, games of imperfect knowledge and games in which players move simultaneously.

History

CGT arose first in relation to the game of nim, which can be solved completely. Nim is an impartial game for two players, and subject to the normal play condition (a player who cannot move loses) the Sprague–Grundy theorem was proved in the 1930s. The theorem shows that all impartial games are equivalent to heaps in nim, thus showing that major unifications are possible in games considered at a combinatorial level (in which detailed strategies matter, not just pay-offs).

The theory introduced in the 1960s of partizan games extended the impartial theory, by relaxing the condition that a play available to one player be available to both. It was pioneered by Elwyn R. Berlekamp, John H. Conway and Richard K. Guy in their book Winning Ways for your Mathematical Plays. Some of the inspiration (for the use in particular of disjunctive sums of games) was based on Conway's observation of the play in go endgames. His book On Numbers and Games, which introduces the concept of surreal number and its generalization to games, was published ahead of *Winning Ways*, though based in part on the same collaboration.

Examples

The introductory text *Winning Ways* introduced a large number of games, but the following were used as motivating examples for the introductory theory:

- Blue-Red Hackenbush -- At the finite level, this partisan combinatorial game allows constructions of games whose values are dyadic rational numbers. At the infinite level, it allows one to construct all real values, as well as many infinite ones which fall within the class of surreal numbers.
- Blue-Red-Green Hackenbush -- Allows for additional game values that are not numbers in the traditional sense, for example, star.
- Domineering -- Various interesting Games, such as hot games, appear in Domineering, due to the fact that there is sometimes an incentive to move, and sometimes not. This allows discussion of a game's temperature.
- Nim -- An impartial game. This allows for the construction of the nimbers. (It can also be seen as a special case of Blue-Red-Green Hackenbush.)

The classic game Go was influential on the early combinatorial game theory, and Berlekamp and Wolfe subsequently developed an endgame and *temperature* theory for it (see references). Armed with this they were able to construct plausible Go endgame positions from which they could give expert Go players a choice of sides and then defeat them either way.

References

John Horton Conway (1976). On Numbers And Games, Academic Press. ISBN 0121863506.
--- (2001). On Numbers And Games (2nd ed.), A K Peters Ltd. ISBN 1568811276.
E. Berlekamp, J. H. Conway, R. Guy (1982). Winning Ways for your Mathematical Plays, Academic Press. ISBN 0120911019, ISBN 0120911027.
--- (2001--2004). Winning Ways for your Mathematical Plays (2nd ed.), A K Peters Ltd. ISBN 1568811306, ISBN 156881142X, ISBN 1568811438, ISBN 1568811446.
Elwyn Berlekamp & David Wolfe (1997). Mathematical Go: Chilling Gets the Last Point, A K Peters Ltd. ISBN 1568810326.
Jorg Bewersdorff (2004). Luck, Logic and White Lies: The Mathematics of Games, A K Peters Ltd. ISBN 1568812108, §§ 21-26.

Game Strategy

In game theory, a player's **strategy**, in a game or a business situation, is a complete plan of action for whatever situation might arise; this fully determines the player's behaviour. A player's strategy will determine the action the player will take at any stage of the game, for every possible history of play up to that stage.

A **strategy profile** is a set of strategies for each player which fully specifies all actions in a game. A strategy profile must include one and only one strategy for every player.

The mathematically precise description of behaviour is connected to computer programming and algorithms.

The concept **strategy** is sometimes (wrongly) confused with that of a **move**. A **move** is an action taken by a player during some moment in the game (e.g., in chess, moving white's Bishop a2 to b3). A **strategy** on the other hand is a complete algorithm for playing the game, implicitly listing all moves and counter-moves for every possible situation throughout the game. The number of moves in a Tic Tac Toe is 4 or 5 (depending on whether you start or not, and considering that neither the first nor the second player can skip a turn), while the number of **strategies** is over 6 trillion.

Examples of strategies

Tit for Tat

Strategies in game theory are of essential importance, since the prisoners dilemma was shown never to lead to cooperation unless multiperiod strategies are considered. A highly effective strategy is "Tit for Tat". It was found in a programming contest, with several algorithms competing for the highest utility score.

Roulette

There is a variety of betting strategies and tactics in the Roulette game. The most famous strategy is the doubling strategy:

1. Set 1€
2. If you lose: double your bet
3. Repeat 2. until you have a profit

This was originally called the "Martingale strategy", and was formalized simply to show why it will not create an expected profit. However, it is a common (folk) strategy seen in many casinos (especially by beginning players, sometimes called "system players"). The typical casino prefers the "system player" to other types of player because the casino's risk is very low (they stand to lose only the minimum bet each time the player starts), but their potential reward is extremely high (the entire capital the gambler stakes). However, most "system players" tend to play only for a short time, and so the casino's edge is not compounded as often against the system player as against the usual roulette players (who vary their bet size less).

Hedging

Hegding is a strategy for financial investments, that searches for the lowest risk or optimal risk to performance ratio. Some kind of hedges are uniquely determined from simple parameters. The Black-Scholes equation demonstrates how a continuous stock buy and selling strategy can replicate an option without risk.

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Video Game Studies

Video game studies (Lat. Ludology) is the still-young field of analysing video games from a social science or humanities perspective.

Although departments of computer science have been studying video games from a functional perspective for years, the study of them in the humanities is still in its infancy. Unlike most computer science efforts which aim to make video games, video games studies, like film theory, attempts to understand video games, players, and the interactions between them. Like most fields, those who study video games often have differing approaches. While scholars use many different theoretical frameworks, the two most visible approaches are ludology and narratology.

The term ludology arose within the context of non-electronic games and board games in particular, but gained popularity after it was featured in an article by Gonzalo Frasca in 1999 "Ludology Meets Narratology: Similitudes and Differences Between (Video) Games and Narrative." The name, however, has not yet caught on fully. Major issues being grappled with in the field are questions of narrative and of simulation, and whether or not video games are either, neither, or both.

The narrativists approach video games in the context of what Janet

Murray calls "Cyberdrama." That is to say, their major concern is with video games as a storytelling medium. Murray, in her book Hamlet on the Holodeck, puts video games in the context of the Holodeck, a fictional piece of technology from Star Trek, arguing for the video game as a medium in which we get to become another person, and to act out in another world. This image of video games certainly has widespread popular support, and forms the basis of films such as Tron, eXistenZ, and The Last Starfighter. But it is also criticized by many for being better suited to science fiction movies such as those than to analysis of real world video games.

The narrativist approach can also be found in the works of Lev Manovich as well as in the works of Jay David Bolter and Richard Grusin, which deal more with the concept of new media in general than with video games as such, but still fundamentally approach video games as a text that can be read much like a book, poem, or film, and that has many of the same elements.

The ludologists break sharply and radically from this. Their perspective is that a video game is first and foremost just that, a game, and that it needs to be understood in terms of its rules, interface, and in terms of the concept of play. Ludologists such as Espen J. Aarseth argue that, although games certainly have plots, characters, and aspects of traditional narratives, these aspects are incidental to gameplay. In one essay, he memorably claims that "the dimensions of Lara Croft's body, already analyzed to death by film theorists, are irrelevant to me as a player, because a different-looking body would not make me play differently... When I play, I don't even see her body, but see through it and past it." Stuart Moulthrop, another ludologist, takes a slightly more moderate perspective, arguing that one cannot completely divorce games from their social context, but still fundamentally arguing that games are not narratives in any meaningful sense.

In another opinion, the dualism ludology-narratology is quite artificial. Ludology does not exclude the so-called "narratology". See Gonzalo Frasca's article "Ludologists love stories, too: notes from a debate that never took place" in the book Level Up (eds. Copier & Raessens, Utrecht University & DiGRA 2003). The intersection of emerging film and videogame forms is explored further by Matt Hanson in the book, The End of Celluloid with chapters dealing with First Person Documentaries (derived from the first-person shooter gaming genre), avatars, synthespians, capsule narratives, and machinima.

Bibliography

Murray, Janet - Hamlet on the Holodeck - MIT Press 1998, ISBN 0262631873
Ryan, Marie-Laure - Narrative as Virtual Reality - Johns Hopkins University Press 2001, ISBN 0801864879
Manovich, Lev - The Language of New Media - MIT Press 2001, ISBN 0262133741
Bolter, Jay David, and Richard Grusin - Remediation: Understanding New Media - MIT Press 2001, ISBN 0262522799
Aarseth, Espen J - Cybertext: Perspectives on Ergodic Literature - Johns Hopkins University Press 1997, ISBN 0801855799
Hanson, Matt - The End of Celluloid: Film futures in the digital age. - Rotovision 2004, ISBN 2880467837
Salen, Katie and Zimmerman, Eric - Rules of Play. Game Design Fundamentals - MIT Press 2003, ISBN 0262240459
Newman, James - Videogames - Routledge 2004, ISBN 041528192X
Wardrip-Fruin, Noah and Harrigan, Pat (eds.) - First Person. New Media as Story, Performance, and Game - MIT Press 2004, ISBN 0262232324
Juul, Jesper - "Games Telling Stories: A brief note on games & Narratives", Games Studies, Vol 1 Issue 1, July 2001.[1]

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Cheating in Online Games

Cheating in online computer games is a broad category of activities, all of which are generally regarded as modifying the game experience in a way that gives a player an unfair advantage over the other players. Depending on the game, different activities constitute cheating, as it is often a matter of consensus opinion.

Cheating exists in all multiplayer, online computer games. While there have always been cheat codes and other ways to make single player games easier, most developers attempt to prevent it in multiplayer games. With the release of the first popular Internet multiplayer games cheating took on new dimensions. Previously it was rather easy to see if the other players cheated, as most games were played on local networks or consoles. The Internet changed that by increasing the popularity of multiplayer games, giving the players anonymity, and giving people an avenue to communicate cheats.

Types of Cheats

User Settings

Typically a player can change settings within a game to make it suit their play style and system. These alterations are generally not cheating, except in extreme circumstances. Changing the keyboard layout to make it easier to use is for example usually accepted. But issues such as changing in-game player models and textures, or modifying the brightness or gamma in order to make it easier to see in dark areas are sometimes borderline cheating.

Exploits

Usually included in this concept of cheating is the use of existing bugs or gameplay aspects unintended by the developers known as exploits. Gamers are divided as to whether all exploitation is cheating, though most consider exploits as cheats if they are particularly unfair. It is also difficult to classify some activities as exploits, because sometimes unintended features in games can make them much more fun to play, like bunny hopping in Quake. However, most exploits are unbalancing to a multiplayer game, and are called cheats because they are based on mistakes by the developers. For example, Duping ruins a synthetic economy and is rarely intended, and therefore is usually called a cheat.

External Software

The most unbalancing cheats usually come from external software. Either the program that runs the game is modified to allow the player to cheat, or other software is run which produces the same results. Wallhacks, aimbots, and other cheats fall into this category.

Cheesing

Cheesing (occasionally referred to as "cheap") is not cheating per se; it refers to players in online multiplayer football games such as Madden and NCAA making playcalls that wouldn't be made in real life, such as going for it on 4th down on their own 20. While doing this is within the rules unless players have formed a league and made an agreement not to cheese, it is generally frowned upon.

Implementation of Cheats

There are many facets of cheating in online games which make the creation of a system to stop cheating very difficult.

"Never trust the client" is a common maxim among multiplayer game developers that summarizes in their opinion the case of client-servers. It argues that programmers should assume that information sent to the client game will be known by that player, regardless of whether or not the player should know that information. For example, the server might tell a client in a First Person Shooter that a player is hiding behind a door and cannot be seen, but a wallhack cheat can reveal the player. Similarly, data from the client might indicate that the client teleported from one side of the map to another for some reason (possibly a change made to the game's data). The server is responsible for sending only the necessary information and for maintaining the game's continuity. (See "Efficiency versus absence of cheating" below for the drawbacks.)

The game software

Many cheats in today's games are changes to the game software, although many game companies have policies which forbid the modification of such code. While the software (for most games) is distributed in binary-only versions and encrypted to make it harder, reverse engineering is always possible. Also many of the data files for the games can be edited without editing the main program and thereby circumvent protections in the software.

Wallhacks and maphacks often function by modifying the software. Other cheats can analyze or change the game's state in RAM, such as some aimbots and programs that give infinite ammo or health.

The hardware

Turning up the brightness on the monitor or using specific graphic cards with drivers that allows you to look through walls ("wallhack") are examples of using hardware tricks to get an advantage. These are frequently impossible to track with software, but they also have limited effect.

Packet tampering

Some cheats completely circumvent the protection of the software by running in real-time and changing the game data while in transmission from the server to the client. Many aimbots, in first-person shooters use tricks like this. Some newer games encrypt the network data, but this uses up computer resources that could be used to make a faster-running or better game instead.

Preventing Cheats

Game developers and third party software developers have created technologies that attempt to prevent players from cheating. Anti-cheating software is most commonly used in popular first person shooters such as Half-Life and its various mods or Quake. A few examples of anti-cheat software are PunkBuster, Cheating-Death, Valve Software's VAC ("Valve Anti-Cheat") and Argus Anti-Cheat.

Some companies elect to ban suspected cheaters from their servers. When this is done by blacklisting the game's serial key, the player is often effectively prevented from playing online the game they purchased. Blizzard Entertainment and Valve Software are known to have banned players, though the actual number of players is unknown. These companies also chose not to restrict these players to "cheating allowed" servers, even though it would be just as easy to implement, mirroring the dislike some took to cheating.

Sometimes the anti-cheating fervor leads to embarrassment, such as when Phil DeLuca, America's Army executive producer, drew parallels between cheating and Japan's attack on Pearl Harbor, and threatened FBI and Secret Service involvement. [1]

It might not be financially wise for a company to fight "cheaters" in its games. Multies are frequently banned in free games but they bring in revenue just like normal players in games that require subscription fees. Gamers have speculated that this is the reason why "two boxing" is not a bannable offense in major MMORPGs. Players are often less concerned about these circumstances because it might be debatable if the actions in question are a form of cheat.

Efficiency versus security

The more of the game code that is run on the server, the fewer cheats are generally possible in the game, as the server's operator has control over what happens. However, a game server has limited bandwidth and limited resources, which makes it necessary to distribute code to the clients. It's a tradeoff between lack of cheats and usability.

For example, a player is not supposed to know who is hiding behind a closed door. The server has to make a trade-off between calculating what the player can and cannot see, which is slow but wallhacks are unlikely, or sending the player the entire world state, which is fast but wallhacks are more likely.

Cheating in MMORPGs

While persistent world online games, such as MUDs and MMORPGs, are often subject to the same sorts of mechanical weaknesses to cheating as other online games, as often as not cheating in such games are social cheats, in the form of confidence games. Many of these confidence tricks are based on old-fashioned real-life tricks, or take advantage of the greed or inexperience of new players.

These scams often take the form of uneven trades or outright bad-faith dealing in trades of in-game items. Players will misrepresent the value of their goods to new players, substitute lookalike worthless items for valuable ones, offer to improve items (by crafting raw materials or enhancing equipment) and then just walk away with the item to be improved, or use one of any other con games.

Confidence tricks are often used to steal players' login information. Scammers will pose as the staff of the game, either in e-mail or in the game itself, and ask for the players' login information under any number of pretexts. Alternately, the scammer will offer cheating or automation services, or require that the player give their information as part of initiation into a (nonexistent) clan.

One particularly long-lived scam is the "Alt-F4 scam." In this scam, the scammer tricks the victim into pressing Alt and F4 (the command to exit a program in Windows; similar scams have used Ctrl-W, the command to close a window in Windows, Ctrl-C, the command to interrupt a Telnet connection, or Command-Q, the command to close a program in Mac OS). Sometimes the scammer tells the victim that this will duplicate a dropped item (which the scammer then picks up and absconds with), and sometimes this trick is just used to get rid of an annoying player.

See also

- Cheat code
- Internet game

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Aimbot

An **aimbot**, sometimes called "auto-aim", is software used in online multiplayer first-person shooter games that assists the player in aiming at the target. Since it gives the user an advantage over unaided players, it is considered a cheat.

Aimbots have varying levels of effectiveness. Some aimbots can do all of the aiming and shooting, requiring the cheater to only move into a position where they can see opponents. This level of automation usually makes it difficult to hide an aimbot though; for example, the player might make inhumanly fast turns that always end with his or her crosshairs targeting an opponent's head. Many highly-skilled players, especially in Counterstrike, are frequently accused of using such programs, and many anti-cheat mechanisms have been employed by companies such as Valve to prevent their use and thus avoid such accusations.

Some games, including Half-Life and Unreal Tournament 2004, have "auto-aim" as an option in the game. This is not the same as an aimbot. It simply helps the user to aim when playing offline against computer opponents.

Types of Aimbots

There are several different types of aimbots at different levels of potency. Some aimbots are partially human controlled, and others operate solely on game-data using memory or packet work to produce actions. StoogeBot is an example of an aimbot (among other things) that operates solely memory and packets. More common, however, are human controlled aimbots.

Color Based Aimbots

The first of these kinds appeared with the first popular FPS games including quake, quake II, counter-strike, etc. These first aimbots were notoriously inaccurate and worked by replacing models with solid color enhancements which displayed vibrant colors while in-game. These were generally solid yellow, green, blue, and red, and each team generally had different color models. With these custom colored models in place, an application began scanning the screen for the color of said models. When it detected a colored model, it instantly moved the mouse on top of the x and y coordinates the color was located at and thus the player aims at the target automatically. Later versions of the color aimbots used spots of colors on a model's head instead of a full body colored model to enhance the potency. Many were detected using these when a player would spray his or her decal on the wall and the aimbot would foolishly aim at the wall instead of any players-- a rather comical effect.

Graphics Driver Based Aimbots

A step up in potency are graphic driver based aimbots. These types of hacks hijack control to the current API used to render a game's graphics to the screen to locate players and other objects. Once a player has been identified and tagged as the target, a series of calculations are performed to take the three dimensional location of a single coordinate within this model and convert it to a two dimensional set of coordinates. This pair of x and y values is then used in conjunction with some input API to move the cursor to the specified location, thus causing the player to aim at the target.

Memory, Engine, and Client Based Aimbots

Above graphics driver based aimbots are the most potent of all, memory based aimbots. Memory based aimbots are applications which read memory that stores the player's current viewing angles in the game and locates targets using graphics driver methods or by finding coordinate information in memory and using trigonometry calculates the desired angles to aim at a specific point on the enemy. Doing so causes the game to instantly jerk and aim at the target and remain there with extreme accuracy. A step above this is engine aimbots which use parts of the game's engine to query player coordinates and angles in order to perform the same actions which are generally more reliable than solely memory based ones. The previous two methods are generally referred to as "hybrid" aimbots-- that is they're a mixture of client and memory/graphic driver methods. A step above both of these are client aimbots which intercept client code (generally using the information specified in an official SDK) and directly modify the client to aim at the target in a similar manner as the previous two. This one is famous for the lock-on feature which means that while the aimbot is locked onto a target, even if you move your mouse you will not stray from the target. These three types of aimbots are incredibly potent.

StoogeBot

One of the first and certainly the most enduring example of an aimbot was the *Stanford StoogeBot*, a proxy-based system for the game Quake written by students at Stanford University. The StoogeBot featured a number of different modes (each of which implemented a different strategy), named after members of The Three Stooges. The

StoogeBot's operator (known as the "driver") used an unmodified Quake client, and moved around the game world as normal, picking up equipment and pursuing (or, in theory, fleeing from) adversaries. Rather than being connected directly to the Quake server, the driver's client connected to a custom proxy on which the StoogeBot code ran. The driver's movement commands were passed through unaffected, but the StoogeBot assumed responsibility for selecting, targeting, and firing weapons. As Quake's network protocol allowed clients (and thus the StoogeBot) to know the positions of players even when they were obscured by scenery, the StoogeBot had the uncanny ability to shoot players moments after they emerged into view (even with slow-moving weapons such as rockets).

The driver's view didn't turn to match the StoogeBot's inhuman aim, instead behaving as if the StoogeBot wasn't present. The StoogeBot's operation was entirely automatic, and it made no attempt to hide its superhuman prowess. Indeed, it announced its presence (in an in-game chat message) and altered the player's name (as sent to the game server) to include the prefix "SBOT*", and its authors didn't release the source to their program, knowing unscrupulous users would immediately remove this protection. The StoogeBot's skills were so blatant, and any game involving a StoogeBot-assisted player so drastically one-sided, that when hacked StoogeBots (which didn't announce themselves) became available, their use remained glaringly obvious.

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Maphack

A **maphack** is a cheat in real-time strategy games that enables the player to see more of the map than the game intends them to see. A common feature in multiplayer real-time strategy games is the inability for the player to see outside the visibility range of the individual units and buildings that they player controls. This concept is called the fog of war. Maphacking enables a cheating player to bypass the fog of war, giving them an advantage over a player who is playing legitimately. This advantage is quite large for most of the real-time strategy games that rely on the rock-paper-scissors dynamic to balance out the units' varying strengths and weaknesses.

Maphacking has also been used to cheat in other games where map visibility provides an advantage, like *Diablo II*.

The maphack is functionally equivalent to a form of the wallhack for first-person shooter games which allows players to see through walls.

Wallhacking

Wallhacking is the use of various methods for cheating in multiplayer first-person shooters by changing the properties of walls. Wallhacking allows cheating players to see things they normally wouldn't be able to, such as the exact location of another player hiding behind a wall, often granting the cheater the ability to kill other players while remaining unseen, particularly when it is possible to shoot through the walls. Wallhacking is the FPS equivalent of maphacking.

Many FPS games provide weapons such as grenades that can kill unseen players, but such explosives rely on splash damage rather than direct hits. However, in a game like *Counter-Strike*, certain guns can shoot through walls, rifles in particular. This allows them to see the enemy and kill them instantly, unseen. On Steam, the online play system for *Counter-Strike*, the offender (depending if the hack is detected by VAC or not) will be banned **permanently** from all VAC servers.

Other types of wallhack include "wallwalk", in which players become able to see through and walk through walls. Sometimes referred to as "ghostmode", this hack enables sneak attacks on anyone walking by the wall, as the player inside the wall is essentially invisible.

A final, perhaps more malicious, form of wallhack is "noclip". Noclip is a cheat code in many games that disables clipping, allowing the player to fly by holding down the "jump" key, move through walls, and causes shots to go through the character. This comes in varied forms, some of which are less unfair than others. Although this cheat is theoretically unable to be used on multiplayer, it can be enabled for online use by changing a single line of code. Fortunately, noclippers are incredibly easy to detect, and usually end up banned from the server that they use their powers on.

Origin

Wallhacks arguably first publicly appeared early in the counter-strike alphas when a certain player under the alias XQZ used his programming skills to create his infamous and classic XQZ2 OpenGL multi-hack. It is known as a multi-hack due to the abundance of features inside it, notably including the wallhack. Wallhacks come in various different forms but all work in essentially the same manner. When OpenGL is rendered to the screen, the graphics library is given coordinates of where the view camera is located in the three dimensional space that is the game you see. Using these coordinates and other parameters defining the field of view, the machine renders what you would be able to visibly see under the circumstances. In memory, all objects that will be drawn on the screen are mapped into buffers to be drawn: there is no wall in front of a player, they are simply two different buffers of coordinates in memory. The game engine specifies that the set of coordinates known as the player model is to be drawn with a GL_DEPTH_TEST mode enabled. This means it will be tested for depth and visibility to all objects between the view camera and it. All things not visible directly in front of your field of view and all coordinates omitted by GL_DEPTH_TEST checking are "culled" out, or are not rendered for sake of salvaging frame per second rates. OpenGL level wallhacks work by disabling this test from running on the model coordinates and essentially the model is drawn on top of everything else regardless of its position. Some wallhacks work by setting blending modes on the wall coordinates and giving them alpha values lower than 1.0f (or 100% opaqueness, depending on blending modes) in order to make them transparent, thus showing player models behind them.

Detection

Wallhacks can be instantly recognized by a player who physically sees the cheater's computer screen and thus can be impossible to use at LAN parties. When playing over the Internet, detection is not always as simple.

Cheat detection software such as PunkBuster might find it difficult to detect wallhacks. While most wallhacks are achieved by making changes to the game's renderer or maps (and are therefore detectable), some can simply be exploited hardware issues. For example, a player might discover that an obscure combination of a specific video card and an old driver causes the game's doors and other props to be rendered in wireframe.

Wallhacking can be difficult for other players to correctly identify in-game. A wallhacker might be skilled at hiding their virtual extra-sensory perception from other players. For example, consistently shooting people in the head through walls might alert players, but just knowing there's opponents hiding behind a box or a corner is more than enough to give that player a extra preparedness. Skilled or lucky players can be misinterpreted as wallhackers. Experienced players become extraordinarily familiar with preferred hiding places and might shoot at or bombard these spots even if they have not seen anyone there.

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Cheat Codes

Cheat codes are codes that can be entered into a video game to change the game's behavior. The practice of cheat codes and secrets in a video game was started in the Atari 2600 game Adventure. Afterwards codes were implemented and used by game developers to playtest certain aspects of their games; for example, a common use of a cheat code is to skip to a level in a game. In moddable games, such cheat modes are often left in released titles specifically for modder use.

The practice became widespread, and now many games have cheat codes intentionally included as a form of easter egg or unlockable reward. Video game magazines have had sections devoted to providing these codes since the late 1980s, and occasionally codebooks are produced which provide cheat codes for a large number of games. There even used to be entire magazines dedicated to cheat codes for new games covering the top consoles of the day. Today, many codes, for games old and new alike, are found online at websites such as GameFAQs and GameWinners.com.

The method of entering cheat codes varies; on video game consoles, which lack keyboards, the code is frequently a sequence of button presses. On computers such as the Amiga or PC, the code can be textual and entered using the keyboard, or more outlandish combinations of mouse, keyboard and controller may be required to activate the code. In modern games, the cheats are also often enabled through adding special settings in game configuration files.

While normal cheat codes are built into the game by the programmers, unofficial cheat codes can be created by manipulating the contents of memory address for a running game. On video game consoles this is done using a cheat cartridge. Users of some early home computers called these codes pokes, named after the command used to input them. Nowadays, cheating like this is considered "hacking" because the user must use external software or hardware to change values in the game memory.

Cheat codes are, by definition, considered cheating and most serious players do not use them. Sometimes, though, using cheat codes is necessary, particularly in case of bugs: If a serious game-stopping bug is encountered, a cheat code may be able to bypass it without the need to start the whole game over again from the beginning.

Sometimes cheat codes will actually spell a word when the buttons are pressed. For example, a code for the Sega Saturn game Bug! is "B, A, B, Y, Down, Right, A, L, Down." This reads "BABYSEALS", if down is read "south", and right is read "east." Another example is the classic "A, B, right, A, C, A, down, A, B, right, A" which spells Abracadabra.

Famous cheat codes

Up, Up, Down, Down, Left, Right, Left, Right, B, A, Start — The Konami Code. First used in Gradius, more prominently used in Contra, has later been copied by many other games. It is also the name of a song by The Ataris.

A, B, A, C, A, B, B – The blood code that allows full blood and fatalities in the Sega Genesis version of Mortal Kombat.

IDDQD, IDKFA and IDSPISPOPD from Doom by id Software.

Up, Down, Left, Right, A+Start - The level select code for Sonic the Hedgehog.

xyzzy – the magic word from Colossal Cave Adventure is often used as a cheat code.

nethack -uwizard -D, which starts NetHack in "wizard mode." Plain -D command-line flag starts "discovery mode" which has fewer cheats.

GOD - The cheat to activate god mode in the first three Commander Keen (and other id Software) games.

rosebud - Unlimited money on The Sims.

thereisnospoon - Based on the quote from 1999 film The Matrix, this code is used in many games to activate bullet-time.

FLUFFYKIWIS entered in the Commodore Amiga version of The New Zealand Story. Earlier versions of the game use MOTHERFUCKENKIWIBASTARD.

JUSTIN BAILEY - Entering this code as a password in the original NES Metroid with the bottom line all hyphens, starts the player character off in her swimsuit, and provided a great many powerups and items in the game.

Down, R, Up, L, Y, B - Entering this in Street Fighter II as the Capcom logo appears allows both players to use the same character in Versus mode.

DINGADINGDANGMYDANGALONGLINGLONG from the Commodore Amiga version of Sleepwalker. The rather hard-to-spell code is a lyric from the song Jesus built my Hot Rod by Ministry.

It is a Good Day to Die from Warcraft II. This activates god mode. The code is a quote from the Star Trek series.

Ctrl+Alt+c - This key combination would bring up a cheat window in certain Maxis games such as Streets of SimCity, Simcopter, The Sims, etc...

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God Mode

In some video games, **god mode** is a state wherein the player character is invulnerable to damage. It is typically activated by entering a cheat code.

The term originated in Moria and was popularised by the games of id Software in the 1990s. The name is derived from the command traditionally used to activate it: typing "GOD" in the game's command console. Other effects may be activated, for example unlimited ammunition or the ability to fly. The cheat is commonplace, particularly in action-oriented first-person shooters such as Quake or Half-Life. The early shooter Rise of the Triad used a *literal* God Mode as a power-up: the player begins making "Godly" noises, becomes ten feet tall, and can disintegrate enemies with homing "Godfire" shot from his or her hand.

God modes (and other similar modes) often originate as a means by which developers test games. If a new feature is implemented in a game but requires play to determine whether it works, it saves time if a developer can quickly reach the relevant portion of the game by avoiding death or by "flying" over time-consuming regions of the game environment. This source of God modes often manifests itself in the route by which players activate these modes - for example, running a game with a development mode flag.

Use of god mode or other cheats is frowned upon in multiplayer gaming. Most cheats are disabled in most muliplayer games by default. However, in some games, cheats are integrated into the gameplay. Dedicated game servers running certain tools (such as "AMX" or "Admin" mod for *Half-Life*) allow the administrators of the server to grant and revoke god mode or other abilites. Another command, called "roll the dice", is used to randomly give an effect (good or bad) to the player using it (he is rolling his dice, so to speak). God mode is usually in the list of possibilities.

In recent years the term godmoding has become an extremely negative term referring to behavior on online role-playing games such as MU*s and PBEM/Post-by-post role-playing forums in which a character takes on powers, attributes and abilities far beyond what would be considered acceptable, forces his or her own actions on another player, or disrupts gameplay with an overly powerful character that exploits its 'godlike' abilities to the detriment of the game and other players. It has become interchangeable with such terms as powergaming and to some extent twinking.

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Konami Code

The **Konami Code** (also known as the **Konami Command** and the **Contra Code**) is a cheat code that can be used in many Konami video games, usually enabling some sort of secret option. The code was first used in the 1986 release of Gradius for the Nintendo Entertainment System. During the game, the player presses the following sequence of buttons on the game controller:

Up, Up, Down, Down, Left, Right, Left, Right, B, A

This is the original version of the code, designed for the NES controller. In common usage, many players will include Start at the end of the code, but this merely serves the function of beginning or unpausing the game and is not part of the actual code. The exact sequence varies from game to game, and has been adapted to fit the button layouts of different video game consoles. The original Konami Code endures as one of the most widely-known cheat codes in the gaming community.

History

The Konami Code was created by Kazuhisa Hashimoto, who was developing the home port of the 1985 arcade game *Gradius*, a scrolling shooter released on the Famicom and Nintendo Entertainment System in 1986. Finding the game too dificult to play through during testing, he created a code which gives the player a full set of powerups, which are normally attained gradually throughout the game. Also, the code entered backwards would award the player 30 lives. For whatever reason, he did not remove the code when testing was finished. The code has continued to be present in Gradius sequels and spin-offs, including Gradius III, which actually destroys the player's ship upon entering the original code.

Arguably the best-known example of the Konami Code is in the 1988 Famicom/NES version of Contra, where using the code increases the player's lives from 3 to 30. Due to the game's intense difficulty, many *Contra* players became reliant on the code to finish the game, earning it the title "The Contra Code".

The popularity of *Gradius* and *Contra* has closely associated the Konami Code with the gaming era of the 1980s, and some "old-school" gamers even consider it a badge of pride to be able to recite the code from memory. The code, however, has appeared in several newer PlayStation 2 games, including Silent Hill 3 and Metal Gear Solid 2. It even shows up in Konami's Bemani line of music games, such as Dance Dance Revolution and DrumMania. The code has further been featured on various t-shirts and other merchandise.

Specific uses in games

Konami games

Batman Returns (SNES)

In options, use controller 2 and press Up, Up, Down, Down, Left, Right, Left, Right, B, A. Use controller 1 to adjust the number of lives.

Boktai: The Sun Is in Your Hand (GBA)

In a certain room the player will find a sign with the Konami Code. Entering the code will reveal a hidden chest.

Castlevania Chronicles (PlayStation)

Entering Up, Up, Down, Down, Left, Right, Left, Right, X, Circle on the title screen will take the player to a hidden options menu that allows them to adjust the "system time" and turn on/off the transparency of the status bar in Original mode. The system time affects small things in the game, like the hands on the clock tower.

Castlevania: Harmony of Dissonance (GBA)

Entering the code on the title screen animation recolors the title screen. The player may then play Boss Rush with the original Simon Belmont, music, and animation from the first *Castlevania*. While significantly harder due to the limited movement, the player can do more damage.

Contra (Famicom/NES)

One of the first uses of the code, and easily the most famous usage.. Entering it at the start screen gives the player 30 lives, making the game much easier to finish. The NES variation of the Konami Code for Contra is Up, Up, Down, Down, Left, Right, Left, Right, B, A, B, A, Start. Alternatively you can enter select in before hitting start for 2 player mode.

***Contra: Shattered Soldier* (PlayStation 2)**

This newer installment of *Contra* features a unique way of inputting the code. At the title screen, pressing Up, Up, Down, Down, L1, R1, L2, R2, L3, R3 on the second controller gives the player 30 lives upon starting the game.

***Cosmic Epsilon* (Famicom)**

Press Up, Up, Down, Down, Left, Right, Left, Right, B, A, Start on the title screen for a hidden message.

***Crisis Force* (Famicom/NES)**

When the code is entered at the title screen, the player will start with 15 lives.

***Dance Dance Revolution 2ndMIX* (Arcade, PlayStation)**

The Single steps on Basic difficulty for the song "Make A Jam!" include the directional portion of the code (i.e. without B or A) five times throughout the song. A faint chime is heard in the music after each such pattern.

***Dance Dance Revolution 2nd Remix* (Playstation)**

Entering the code Up, Up, Down, Down, Left, Right, Left, Right on the Mode Selection Screen will Unlock Super Mode.

***Dance Dance Revolution EXTREME* (Japanese version; Arcade, PlayStation 2)**

In the song "Twinbee ~Generation X~", all 4 of the Single (4 panels) steps on Beginner, Light, Standard and Heavy difficulty include the directions of the Konami code. All three (Light, Standard, Heavy) stepcharts for the song on Doubles play (8 panels) contain the code's directional portion. It is worth noting that the first instance of the code in all 3 doubles stepcharts takes place on the left pad. This may have something to do with the code classicaly being entered as player 1.

The song is based on a Konami game with the same title, Twinbee.

Dance Dance Revolution ULTRAMIX (Xbox)

If a controller (a handheld, not a dance pad) is plugged in to the 4P (furthest to the right) controller port, and the code is entered during the credits, all of the game's hidden songs will be instantly unlocked.

Deadly Arts (Nintendo 64)

Entering the code on the title screen unlocks Gouriki as a playable character. Entering the code backwards unlocks Reiji.

Detana!! Twinbee (PC Engine)

At the title screen press Up, Up, Down, Down, Left, Right, Left, Right, II, and I to select up to 9 credits in the options menu. Pressing Up, Up, Down, Down, Right, Left, Right, Left, I, II on controller two will allow the selection of up to ten ships in the options menu. Reversing the code, on the title screen press I, II, Right, Left, Right, Left, Down, Down, Up, and Up on controller three to unlock 'Vmode' (Arcade Mode) in the options menu.

Detana Twinbee Yahoo! Deluxe Pack (PlayStation)

Pause the game in Arcade Mode and press Up, Up, Down, Down, Left, Right, Left, Right, X, Circle to unlock Dark Play.

DrumMania (Arcade)

On the first "mix" of this game, the drum pads and bass pedals are used to activate the Expert Real difficulty level.

Fighting Eleven / International Superstar Soccer Deluxe (Super Famicom/SNES)

This code replaces the referee with a dog.

Flame of Recca Final Burning (PlayStation 2)

At the title screen, hold L1 and R1 button and enter the Konami Code (Up, Up, Down, Down, Left, Right, Left, Right, X, Circle) to unlock Joker.

Gradius (Famicom/NES)

Pausing the game and then entering the code activates all powerups except for Speed Up and Double.

Gradius (PC Engine)

Pausing the game and then entering the code Up, Up, Down, Down, Left, Right, Left, Right, II, and I activates full options, missile, and shield.

Gradius II (Famicom/NES)

Entering the code at the title screen starts the player with thirty lives.

Gradius II (PC Engine)

Pausing the game and then entering the code Up, Up, Down, Down, Left, Right, Left, Right, II, and I activates full power. This code works more than once on Easy mode.

Gradius III (Super Famicom/SNES)

Normally entering the code while paused activates all powerups, but the player is instantly destroyed upon unpausing. However, if the player enters the code and substitutes the L and R buttons for Left and Right, the powerups are applied without penalty.

Gradius III (PlayStation 2)

Pausing the game and then entering the code activates all powerups except for Speed Up and Double.

Gradius IV (PlayStation 2)

Pausing the game and then entering the code activates all powerups except for Speed Up and Double.

Gradius V (PlayStation 2)

This version uses yet another variation of the code: Up, Up, Down, Down, Left, Right, Left, Right, L1, R1. Entering the code while paused gives full powerups, including the Laser weapon. Using L2 and R2 for the final two buttons gives the Double Shot instead.

Gradius Deluxe Pack (Sega Saturn)

Pausing the game then entering the code will give full weapons only on Saturn Easy and Saturn Hard difficulty levels.

Gradius Gaiden (PlayStation)

Pausing the game then entering the code Up, Up, Down, Down, Left, Right, Left, Right, X, Circle will result in a power up.

Gradius Galaxies (Game Boy Advance)

Normally entering the code while paused activates all powerups, but the player is instantly destroyed upon unpausing. However, if the player enters the code and substitutes the L and R buttons for Left and Right, the powerups are applied without penalty. Entering Down, Down, Up, Up, Right, Left, Right, Left, A, B will result in fill powerups, but subtracts one life per use. Down, Down, Up, Up, R, L, R, L, A, B gives full powerups followed shortly by self destruction.

Gyruss (NES)

For the NES game Gyruss, the code must be entered in reverse order. Entering A, B, Right, Left, Right, Left, Down, Down, Up, Up at the title screen will give the player 30 lives.

Kid Klown in Night Mayor World (NES)

On the title screen press Up, Up, Down, Down, Left, Right, Left, Right, B, A to unlock Hard Mode.

Konami Collector's Series: Arcade Advanced (Game Boy Advance)

In the classic arcade game collection *Konami Collector's Series: Arcade Advanced*, when the Konami Code is entered on any main menu of a game, you unlock a version of the game with enchanced graphics and/or additional features or extra lives.

***Legend of the Mystical Ninja* (Super Famicom/SNES)**

One of the townspeople in this game tells you, "If you press up, up, down, down, left, right, left, right, B, A, it will do nothing."

***Salamander/Life Force* (Famicom/NES)**

Entering the code at the start screen gives the player 30 lives.
====***Metal Gear Solid 2: Sons of Liberty* (PlayStation 2)**==== After finishing the game, when the clear code is presented on-screen, pressing Up, Up, Down, Down, Left, Right, Left, Right, X and Circle will cause Snake to remark "What do you think you're doing?", confirming the code. It does not do anything else. it is a very usfull code.

***Metal Gear Solid 2: Substance* (PlayStation 2, Xbox, PC)**

In addition to the above code from *Sons of Liberty*, entering "UUDDLRLRBA" as the player username in *Missions* mode will unlock all characters (Ninja Raiden, Pliskin, etc.)

***Metal Gear Solid 3: Snake Eater* (PlayStation 2)**

Pressing Up, Up, Down, Down, Left, Right, Left, Right, Square, and Triangle when the Konami logo first appears will cause it to flash, confirming the code. This will change the names in the game's opening title sequence to display the "Opening Title Staff" - the names of the people who created the title sequence.

In addition, when battling The End, entering Up, Up, Down, Down, Left, Right, Left, Right, Square, and Triangle in the map viewer will show his location. The code needs to be entered each time the player looks at the map viewer.

***Nagano Winter Olympics '98* (PlayStation, Arcade)**

In the freestyle aerials event, one of the jumps (bDfDf) requires inputting the Konami code quickly to complete successfully.

***NBA Give ‘N Go* (NES)**

Press Up, Up, Down, Down, Left, Right, Left, Right, B, A on title screen to unlock “Super Difficulty Level” in the Options menu.

Nemesis (Game Boy)

Pausing the game and entering the code will give the player full options.

Pop'n Twinbee (Super Famicom/SNES)

Entering the code will unlock an extra difficulty level.

Silent Hill 3 (PlayStation 2)

Entering the code in the title screen causes a supporting character to appear in his underwear in each cutscene.

Smart Balls (SNES)

When the title screen says, *Push Start Button*, press Up, Up, Down, Down, Left, Right, Left, Right, B, A, Select, Start to select a stage.

Teenage Mutant Ninja Turtles (Gamecube, PlayStation 2, Xbox)

Entering the code (Up, Up, Down, Down, Left, Right, Left, Right, X, Circle on the PS2 version) on the title screen will give the characters silly noises while walking.

Teenage Mutant Ninja Turtles (Game Boy Advance)

Entering the code at the title screen unlocks Very Hard Mode.

Teenage Mutant Ninja Turtles: Fall of the Foot Clan (Game Boy)

Pausing the game and entering the code will replenish the player's energy. This code will only work once per game .

Teenage Mutant Ninja Turtles III: The Manhattan Project (Famicom/NES)

Entering the code at the title screen with the A and B buttons reversed gives access to a stage select mode.

In the Japanese version (titled *Teenage Mutant Ninja Turtles 2: The*

Manhattan Project), the game will simply display a message from Konami. In order for the code to work properly, the functions of each button must be reversed (Down, Down, Up, Up, Right, Left, Right, Left, B, A).

***Teenage Mutant Ninja Turtles IV: Turtles in Time* (Super Famicom/ SNES)**

Entering the code at the title screen on controller 2 allows the selection of 10 lives in the Options menu.

***Teenage Mutant Ninja Turtles: Tournament Fighters* (Super Famicom/SNES)**

Entering the code at the title screen on controller 2 will unlock Speed Level 3 in Options menu.

***Top Gun: The Second Mission* (NES)**

To receive three additional planes for every 20,000 points. Go to the title screen and press Up, Up, Down, Down, Left, Right, Left, Right, B, A, Start.

***Twinbee: Rainbow Bell Adventure* (Super Famicom/SNES)**

Pausing the game and entering the code will allow a player to switch characters. Replacing Left with L and Right with R will give the player full health and all power-ups.

***Zone of the Enders: The 2nd Runner* (PlayStation 2)**

While fighting the Vic Viper boss in Extra Missions Mode, entering the code with L1 and R1 instead of A and B activates the Zoradius mini-game. Entering the same code again in Zoradius while paused gives the player full powerups.

***Zombie Nation* (NES)**

Pause the game and press Up, Up, Down, Down, Left, Right, Left, Right, B, A to refill your energy bar.

Non-Konami games

3-D Worldrunner (Squaresoft, NES)

This game supports the code, if in a somewhat tongue in cheek manner. Pausing during play and entering the Konami Code produces the message "I AM NOT KONANI [*sic*]" with no further effect, beneficial or otherwise.

B.C. Kid (Hudson Soft, Amiga)

Select OPTIONS from the title screen. On the option screen use and enter the following sequence: Up, Up, Down, Down, Left, Right, Left, Right, then begin a game to gain infinite lives.

Drymouth (Demiforce, Gameboy Color)

Entering the code at the titlescreen will enable a secret fourth character who can use all of the other characters' items.

Gish (Chronic logic, Macromedia Flash)

Enter Up, Up, Down, Down, Left, Right, Left, Right, "A", Space, entered on the "Chronic Logic presents" screen to unlock the game's turbo mode.

Grandia (Game Arts, Sega Saturn and Sony PlayStation)

A door unlock code in this game is Right, Right, Left, Left, Down, Up, Down, Up, a simple rearrangement of the Konami Code (Up & Right are reversed, and Down & Left are reversed).

Half-Life 2 (Valve, Microsoft Xbox)

In the Xbox port of Half Life 2, if you press up-up-down-down-left-right-left-right-b-a in gameplay, you will get 25 health points.

Heli Attack 3 (Squarecircleco, PC)

After clicking "players" and "cheats", type "up up down down left right left right b a select start" into the box to unlock all weapons.

Insaniquarium (PopCap and Flying Bear, Macromedia Flash)

Type the code on the main screen to enter the Sandbox Mode, in which many game elements can be placed by hitting keys on the keyboard.

***Kingdom of Loathing* (Asymmetric Publications, PC)**

The code is the solution to a puzzle, and must be entered as part of solving the primary quest.

***Ms. Pac-Man And Galaga: Class Of 1981* (Midway, Arcade)**

When the combination Up, Up, Up, Down, Down, Down, Left, Right, Left, Right, Left is performed, the machine makes a dot-gulping sound, and pressing Start begins a session of the original Pac-Man.

***Mortal Kombat 3* (Acclaim, SNES)**

Entering Up, Up, Down, Down, Left, Right, A, B, A will bring up the 'Kool Stuff' menu

***Street Fighter 2* (Capcom, Arcade)**

Entering Up, Up, Down, Down, Left, Right, Left, Right, Medium Punch, Light Punch during a demo fight will display the game statistics

***Quake 4* (id Software, Xbox 360)**

While playing, press the back button on the controller to bring up the objectives window. Press up, up, down, down, left, right, left, right, b, a to instantly complete all objectives.

***Star Ocean: Till the End of Time* (Square Enix, PlayStation 2)**

Equipping the Rabbit Ears Chalice will allow said character to self destruct when the Konami Code is entered.

***Super Monkey Ball* Jr. (Sega, Game Boy Advance)**

Inputting the code will temporarily change the title screen to "Super Nice Try".

***Tom and Jerry* (Hi-Tech Expressions, NES)**

When the code is entered (followed by Select) at the title screen, one can play the game with an infinite nine lives.

***Tony Hawk's Pro Skater 2* (Activision, Game Boy Advance)**

The code can be entered at the main menu while holding R to unlock Spider-Man.

***Trogdor* (The Brothers Chaps, Macromedia Flash)**

If one clicks and holds the "G" in the final TROGDOR title screen it will bring up the hints screen, enter the Konami Code at this time using the keyboard and Trogdor will start the game with 30 lives, an obvious nod to Contra.

***Ty the Tasmanian Tiger 2: Bush Rescue* (Electronic Arts, Game Boy Advance)**

Pausing the game with Select and then entering up, up, down, down, left, right, left, right, B, A, B, A and then Start unpauses the game and gives the main character, TY, a million "opals" (his unit of currency).

***WarioWare, Inc.: Mega Microgame$* (Nintendo, Game Boy Advance) and *WarioWare, Inc.: Mega Party Game$* (Nintendo, GameCube)**

Both versions include an Orbulon microgame in which the player must enter a sequence of directional and button commands as listed on the screen. Quite frequently, the sequence is Up, Up, Down, Down, Left, Right, Left, Right.

Mentions in popular culture

- The somewhat humorous gothic band Gothsicles have a song titled Konami Code, with the lyrics: *Contra! 30 Guys!/Enter in this code for thirty lives!/Contra! 30 Guys!/Punch in the code for thirty lives!/UP UP DOWN DOWN LEFT RIGHT LEFT RIGHT B A SELECT START/Contra! 30 Guys!/The following code makes the body count rise!*
- The rock band Schoolyard Heroes mentions the Konami Code in their song "Contra," which features the lyrics "Up up down

down/Left right left right/Secret Contra code for extra life."

- The Moldy Peaches mention the Konami code in the song "Anyone Else But You", which features the lyrics "Up up down down left right left right B A start/Just because we use cheats doesn't mean we're not smart "
- The ska band The Konami Code was active in the DC-Area music scene from 2000 to 2003. One of their songs was *The Konami Code Theme Song* which contains only the lyrics "Up Up Down Down/Left Right Left Right/B A B A/Select Start."
- The professional wrestler Jimmy Jacobs uses a seated Shiranui that he calls the Contra Code.
- In the episode *Gaz, Taster of Pork* of Invader Zim, Shadowhog ask to Gaz: "What is the secret code for unlimited lives in Super Kicky Fighter?" and she answers: "Up, up, down, down, left, right, left, right, A, B, B, A, start."
- On The Ataris 2001 album End Is Forever, track 5 is called "Up, Up, Down, Down, Left, Right, Left, Right, B, A, Start"
- The Pettit Project's song "99 lives" from the album CheeROCKracy contains the lyrics, "Up, Up, Down, Down, Left, Right, Left, Right, B, A, Select Start / now I'll play you all night"
- YTCracker's album NerdRap Entertainment System contains a song by the same name. Lyrics start "Up, up/down, down/left right/left right/then b-a-start/the screen goes white."
- Up Up Down Down Left Right Left Right B A Start is now the name of a rock band (www.upupdowndown.org).
- The webcomic *Her! [Girl vs Pig]* contains a reference to the Konami code.
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Version 1.2, November 2002

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